

Index to Volume 25 (1983) of IR&D

Bold type refers to issue numbers in Vol. 25 of Industrial Research & Development. Light numerals indicate page numbers

A		Atmospheric backscatter	10, 155.	Cambridge Ring	4, 74.
Ability	3, 193.	Atom probe field ion microscope	10, 40.	Capacitance manometers	10, 162.
Abinitive photodecomposition	8, 68.	Atomic number	3, 88; 9, 48.	Capacitive key	6, 106.
Abrasion-resistant rubber	1, 37.	Atomic absorption	2, 100; 10, 79.	Capital expenses	1, 69; 9, 107.
Absolute novelty	12, 29.	Atomic analysis	8, 39.	Capitalism	9, 208.
Absorbance detector	10, 76.	Atomic fluorescence spectrometer	2, 3, 102.	Carbon fiber band	9, 76.
Absorbed current	9, 155.	Atomic layers	4, 56; 8, 108.	Carbon-to-carbon connectivities	11, 94.
Absorption refrigeration cycle	11, 37.	Atomic nuclei	9, 53.	"Carbonate dip"	9, 98.
Academic participation in industrial sector	6, 46.	Atomic orbitals	11, 132.	Catalytic reactors	6, 62.
Academic research	8, 52; 12, 40.	Atomic spacing	4, 62.	Cation exchange membrane	9, 98.
Academic respectability	1, 50.	Atomic spectroscopy	11, 132.	Cation-exchange separations	2, 153.
Acceleration forces	6, 155; 8, 99.	Atomization cell	10, 63.	Ceramic ferrite magnets	3, 115.
Accelerator beams and protons	9, 50.	ATS-3 satellite	2, 3, 100.	Ceramic injection molding	7, 77.
Accident reduction	9, 72.	Attitude control	11, 60; 12, 58.	Ceramic surge arresters	4, 122.
Accident simulation	12, 48.	Auger electron emission	9, 155.	Ceramics	2, 142; 4, 44; 7, 76.
Accountability for performance	9, 48.	Auger electron spectroscopy	8, 108; 9, 154.	Cerankov radiation	3, 85.
Accretionary prism	2, 64.	Aurora borealis	2, 66; 4, 41; 5, 85.	Cesium atoms vibration	9, 60.
Acid rain	1, 47; 5, 58; 8, 48.	Australian science budget	2, 78.	Challenger	1, 43; 4, 43; 6, 50; 9, 64.
Acoustic environment	9, 42.	Australian space agency	2, 78.	Charge generation (ion) gases	10, 164.
Acoustic "signature"	5, 115.	Automation systems	8, 82; 10, 39.	Chemical decontamination system	10, 131.
Acoustic waveguide corona probe	10, 135.	Automobile	7, 23, 33.	Chemical degradation	4, 70.
Acrylic automobile finishes	11, 54.	Automobile air conditioning	11, 37.	Chemical industry	9, 62.
Action Analytical Instruments	10, 140.	Auxiliary air	8, 105.	Chemical ionization (CI)	11, 124.
Advanced degree	3, 101; 5, 123.	Avalanche photodiode	12, 35.	Chemical matrix effects	2, 100; 5, 141.
Advanced Energy Inc.	10, 140.	Avionics system	11, 82.	Chemical shift	11, 82.
Advanced engine technology	11, 80.			Chemical structures	10, 3; 11, 90.
Advanced laser atmospheric remote sensor	7, 37.			Chemical suppression	2, 151; 9, 99.
Advanced Limiter Test-I	10, 35.			Chemical vapor deposition system	9, 150.
Advanced-very-large-scale integration (AVLSI)	3, 37.			Chinese engineers	3, 43.
"Aerocapture"	4, 48.			Chromatic aberration	9, 113.
Affinity chromatography	8, 78.			Chromatic color	11, 106.
Agricultural technology	4, 44; 5, 62.			Chromatography-automation system	8, 86.
Air conditioners	8, 101; 11, 37.			Chromatography-automation system	8, 112.
Air-moving capacity	4, 139.			Chromophoric density	5, 92.
Air pollution	1, 47; 11, 79.			Civil Service promotion	9, 48.
Air transportation	11, 79, 80, 82.			Clean room	2, 185; 7, 3, 95; 11, 141.
Aircraft engines	4, 51; 11, 79.			Cleaved coupled-cavity laser	9, 82; 12, 35.
Aircraft fins	4, 36.			Climatic changes	5, 58; 6, 17; 8, 62.
Airfoil cores	7, 94.			Clinch River Breeder Reactor	9, 49; 12, 45.
Airframe design	11, 82.			Clothing systems	5, 78.
Airglow photometer	2, 66.			Clutch facing material	7, 90.
All-sky survey	9, 74.			CMOS supercomputer	9, 58.
Alloy formulation	7, 83.			CMOS/SOS	5, 92.
Alloy semiconductors	1, 89.			Coal liquefaction process	10, 131.
Along-track scanning radiometer	5, 78.			Coal mines	5, 40.
Alpine fault	8, 62.			Coal seams	12, 64.
Aluminum electromigration	3, 147.			Coal seam fracture zones	6, 40.
AlGAs lasers	5, 66.			Coal testing technology	9, 39.
Aluminum-silicon interaction	3, 141.			Coating machine	11, 141.
Amateur radio operators	9, 69.			Coalt-enhanced magnetic particle	8, 35.
American women in space	9, 64.			Coherent Anti-Stokes Raman Scattering	6, 62; 11, 51.
American refinement process	10, 132.			Cohesive energy	6, 62; 11, 51.
Amoral individuals	3, 11.			Collaborative research groups	8, 48, 58.
Amorphous glass-like, iron-based alloy	5, 37; 6, 47.			Collapsing star	4, 96; 11, 64.
Amorphous silicon technology	12, 63.			Colliding Beam Accelerator	9, 49; 11, 52.
Aneroid detection	1, 42.			Collision-induced dissociation	11, 127.
Analog/digital converters	5, 112; 10, 100.			Color graphics	11, 3, 105.
Analytical instruments	2, 123; 10, 76.			Color-negative photographic system	10, 108.
Analytical methodology	8, 161.			Color perception	11, 108.
Analyzer cell	11, 125.			Colorimetric detectors	9, 96.
Anik C	9, 64.			Columbia	1, 43; 6, 54; 9, 66; 11, 50.
Animal metabolic functions	8, 70.			Column diameter	4, 105.
Animal absorption	12, 66.			Column life	2, 131.
Anisotropy effects	3, 105; 8, 115.			Computation prechamber inserts	7, 44.
Antarctic research	1, 42; 2, 78; 11, 80.			Combustion synthesis	4, 89.
Antares laser	11, 37.			Comets	7, 50; 9, 206; 11, 60.
Antibodies	9, 17, 42.			Commercial aircraft telephone	4, 35.
Anti-cancer work	12, 11.			Commercial investment	7, 70.
Antisatellite anxiety	8, 97.			Commercial rewards	10, 58.
Antimony	1, 19; 3, 193.			Commercial rocketry business	7, 48.
"Anti-noise" research	9, 42.			Commercial space ventures	9, 64.
Antineutrino group	10, 50.			Commercial teletext broadcasting	9, 40.
Antiprotons	9, 50.			Communication control	5, 199.
Antisocial activities	3, 193; 4, 187.			Communications disturbances	2, 66.
Artificial laws	5, 136; 8, 46; 10, 31; 11, 50, 92.			Communications network	2, 137; 5, 112.
Apollo program	6, 76.			Communications satellites	1, 43; 3, 37.
Applied Magnetics Laboratory Inc.	10, 115.			Communicators	2, 166.
Arbitration	10, 31.			Compact magnets	7, 33.
Arc lamp	10, 107.			Company funding of R&D	1, 71.
Arc processes for titanium diboride	10, 127.			Competitive business	6, 46; 9, 91; 203.
Argon-fluoride excimer laser	8, 68.			Composites materials	8, 99; 11, 79, 82.
Argonne National Laboratory	10, 115.			Computer licensing	4, 29.
Argonaut	10, 50.			Computational chemistry	1, 78.
Ariane	6, 72; 9, 64.			Computer-generated colors	8, 3.
Armature excitation	3, 115.			Computer-generated holographic lenses	9, 111.
Arms control stability	5, 111.			Computer graphics	9, 114; 12, 40.
Arms reduction	2, 244.			Computer R&D	5, 92; 8, 39; 9, 54; 10, 35.
Arsenic	3, 77, 193.			Computer simulation	4, 128; 8, 104.
Articles for IR&D	12, 150.			Computer software technology	5, 97.
Artificial bones	6, 60.			Computerized bindings	9, 40.
Artificial intelligence	1, 37; 4, 17, 116.			Computerized production	5, 54.
Artistic works	4, 29; 9, 31.			Computerized shopping service	8, 35.
Asbestos-free friction products	7, 90.			Conduction devices	4, 70, 123.
Asbestos separator materials	1, 37, 70.			Confidentiality agreements	7, 27, 46.
Aseptic fluid transfer system	9, 58.			Conformity	5, 204.
Ash cloud discriminator	1, 62.			Connectivity file	1, 76.
Aspheric testing	9, 112.			Consent of disease	9, 17.
Assembly line	5, 23; 7, 23.			Consentious refusal	5, 199.
Asteroid mining base	11, 56.			Consensus management	11, 25.
Astronomical emissions	9, 72.			Constricted double-heterojunction large-optical-cavity diodes	5, 66.
Astronomical observations	4, 51.				
Astronomical survey	5, 120.				
Asynchronous acquisition	1, 44; 8, 54.				
Atlantis	1, 44; 8, 54.				
B		Babcock & Wilcox Co.	10, 112.		
Backscatter light	7, 37.	Backscattering spectrometry specificity	9, 158.		
Backward stimulated Raman scattering spectrometer	4, 80.	Bacterial genetics	8, 77.		
Bacterial strain	11, 42.	Bacteriological warfare	10, 208.		
Bacteriological warfare	10, 208.	Balance of funding	9, 106.		
Balance of funding	9, 106.	Balance of trade	11, 11.		
Balance of trade	11, 11.	Baldridge, Malcolm	10, 47.		
Baldridge, Malcolm	10, 47.	Bardeen, Dr. John	3, 44.		
Bardeen, Dr. John	3, 44.	Barium niobate crystals	9, 86.		
Barium niobate crystals	9, 86.	Barnard 5	9, 74.		
Barnard 5	9, 74.	Barrier elimination	3, 122.		
Barrier elimination	3, 122.	Battelle's Marine Research Lab	5, 103.		
Battelle's Marine Research Lab	5, 103.	Battelle Memorial Institute	10, 76.		
Battelle Memorial Institute	10, 76.	Battery	1, 37; 4, 70; 9, 35.		
Battery	1, 37; 4, 70; 9, 35.	Battery-powered cars	9, 35.		
Battery-powered cars	9, 35.	Battery technology	5, 66.		
Battery technology	5, 66.	Believes	5, 147.		
Believes	5, 147.	Beta-delayed, low-energy radioactivity	5, 52.		
Beta-delayed, low-energy radioactivity	5, 52.	Beta-relaxation process	3, 105.		
Beta-relaxation process	3, 105.	Biaxial shock testing machine	8, 96.		
Biaxial shock testing machine	8, 96.	Bialox woven fiber	9, 78.		
Bialox woven fiber	9, 78.	Bionic shape for spacecraft	11, 49.		
Bionic shape for spacecraft	11, 49.	Bifluoride ion	4, 54.		
Bifluoride ion	4, 54.	Big Bang	7, 62.		
Big Bang	7, 62.	Binary-cycle technique	2, 74.		
Binary-cycle technique	2, 74.	Bindings	9, 40.		
Bindings	9, 40.	Bingham plastic flow	7, 78.		
Bingham plastic flow	7, 78.	Bioanalytical Systems Inc.	10, 87.		
Bioanalytical Systems Inc.	10, 87.	Biocatalysts	8, 77.		
Biocatalysts	8, 77.	Biotechnology tools	5, 51.		
Biotechnology tools	5, 51.	Bipolar transistors	9, 60.		
Bipolar transistors	9, 60.	Birth of a star	4, 124.		
Birth of a star	4, 124.	Bismuth-rich oxide	4, 41.		
Bismuth-rich oxide	4, 41.	Black Brant IX rocket	6, 66.		
Black Brant IX rocket	6, 66.	Black-dot Braille letters	11, 62.		
Black-dot Braille letters	11, 62.	Black hole	3, 92; 4, 95; 5, 204; 6, 155; 158.		
Black hole	3, 92; 4, 95; 5, 204; 6, 155; 158.	Bloch, Felix	8, 162; 11, 62.		
Bloch, Felix	8, 162; 11, 62.	Boron	8, 76.		
Boron	8, 76.	Boron nitrides	8, 113.		
Boron nitrides	8, 113.	Bragg-Brentano parafocusing goniometer	1, 87.		
Bragg-Brentano parafocusing goniometer	1, 87.	Braille writing	6, 65.		
Braille writing	6, 65.	Brake block composition	7, 89.		
Brake block composition	7, 89.	Breeder fuel	2, 39; 12, 48.		
Breeder fuel	2, 39; 12, 48.	Breeder reactor	12, 45.		
Breeder reactor	12, 45.	British astronomers	2, 51.		
British astronomers	2, 51.	Broadband mode	11, 128.		
Broadband mode	11, 128.	Budget allocations	11, 50.		
Budget allocations	11, 50.	Budget FY84	4, 76; 11, 54.		
Budget FY84	4, 76; 11, 54.	Budget FY85	11, 144.		
Budget FY85	11, 144.	Buffer layer	4, 62; 9, 158.		
Buffer layer	4, 62; 9, 158.	Bureau of Mines	10, 124.		
Bureau of Mines	10, 124.	Bureaucratic restrictions	6, 46; 9, 82.		
Bureaucratic restrictions	6, 46; 9, 82.	Buried-gate design	2, 58.		
Buried-gate design	2, 58.	Burn-through resistance	4, 36.		
Burn-through resistance	4, 36.	Burning temperatures	12, 64.		
Burning temperatures	12, 64.	Burnup goal	12, 45.		
Burnup goal	12, 45.	Burst potential	7, 90.		
Burst potential	7, 90.	Business analysis	5, 138.		
Business analysis	5, 138.	Business flowchart	1, 33; 12, 23.		
Business flowchart	1, 33; 12, 23.	Business plan	1, 33.		
Business plan	1, 33.	Business projections	12, 52.		
Business projections	12, 52.	Buyer Profile	3, 92.		
Buyer Profile	3, 92.	Buying power	3, 92.		
Buying power	3, 92.				
C		CAD/CAM system	1, 80; 7, 46.		
CAD/CAM system	1, 80; 7, 46.	Cable isolators	5, 130.		
Cable isolators	5, 130.	Calibration drift	2, 103.		
Calibration drift	2, 103.	California spirit	4, 23; 7, 124.		
California spirit	4, 23; 7, 124.	Callisto	2, 53.		
Callisto	2, 53.				
Consumer-rights groups	5, 136.				
Contaminated water	7, 60.				
Continuous culture techniques	8, 78.				
Continuous-wave electron accelerator	7, 37.				
Contrast ratio	11, 107.				
Contrast transfer	2, 109.				
Controlled commodities	6, 46.				
Controlled-grain boundary	2, 144.				
Controlled-pore ceramics	10, 148.				
Cooperative research programs	10, 78.				
COP meter	12, 56.				
Copolymer research	1, 48.				
Copper powder	11, 73.				
Copying machines	5, 23.				
Copyright law	4, 29; 7, 27, 47; 9, 31; 11, 31.				
Copyright protection	9, 31.				
Coran, Aubert	3, 44.				
Corporate culture	10, 25.				
Corporate executives	10, 45.				
Corporate money	9, 53.				
Corporate patent attorney	5, 108.				
Corrosion	7, 82; 9, 111.				
Cosmic processes	8, 163.				
Cosmic rays	3, 85.				
Cosmic x-ray sources	12, 58.				
Cot reduction	3, 122; 10, 47.				
Cot nebula	4, 99.				
Creative opportunity	9, 106.				
Creativity	2, 25; 3, 25; 5, 203, 204.				
Crewe, Dr. Albert	3, 51.				
Criminal element	3, 193.				
Crimp	9, 76.				
Critical technology	8, 54.				
Cross coupling	8, 100.				
Cross-flow nebulizer	2, 101.				
Cross-training millwrights program	4, 42.				
Cruise drag	11, 82.				
Cruise efficiency	11, 84.				
Crustal movements	10, 61.				
Cryogenic pumps	4, 142.				
Cryogenic refrigeration	8, 56; 11, 56.				
Cryotron	3, 58.				
Crystall growth processes	9, 149.				
Crystallography	6, 71; 9, 159.				
Cultural changes	9, 99.				
Cultured-cell models	12, 11.				
Cure effect	2, 52.				
Current densities	10, 35.				
Cure fitting	9, 115; 11, 99.				
Cutting tool insert	12, 55.				

Index to Volume 25 (1983) of IR&D

Bold type refers to issue numbers in Vol. 25 of Industrial Research & Development. Light numerals indicate page numbers

A

Ability 3, 193
 Ablative photodecomposition 6, 68
 Abrasion-resistant rubber 1, 37
 Absolute novelty 12, 29
 Absorbance detector 10, 76
 Absorbed current 9, 155
 Absorption refrigeration cycle 11, 37
 Academic participation in industrial sector 6, 46
 Academic research 8, 52; 12, 40
 Academic respectability 1, 50
 Acceleration forces 6, 155; 8, 99
 Accelerator beams and protons 9, 50
 Accident reduction 9, 72
 Accident simulation 12, 48
 Accountability for performance 9, 48
 Accretionary prism 2, 64
 Acid rain 1, 47; 5, 58; 8, 48
 Acoustic environment 9, 42
 Acoustic "signature" 5, 115
 Acoustic waveguide corona probe 10, 135
 Acrylic automobile finishes 11, 54
 Action Analytical Instruments 10, 140
 Advanced degree 3, 101; 5, 123
 Advanced Energy Inc. 10, 140
 Advanced engine technology 11, 80
 Advanced laser atmospheric remote sensor 7, 37
 Advanced Limiter Test-I 10, 35
 Advanced-very-large-scale integration (AVLSI) 3, 37
 "Aerocapture" 4, 49
 Affinity chromatography 8, 78
 Agricultural technology 4, 44; 5, 62
 Air conditioners 8, 101; 11, 37
 Air-moving capacity 4, 139
 Air pollution 1, 47; 11, 79
 Air transportation 11, 79; 80, 82
 Aircraft engines 4, 51; 11, 79
 Aircraft fins 4, 36
 Airfoil cores 7, 94
 Airframe design 11, 82
 Airglow photometer 2, 66
 All-sky survey 9, 74
 Alloy formulation 7, 83
 Alloy semiconductors 1, 89
 Along-track scanning radiometer 5, 78
 Alpine fault 8, 62
 Aluminum electromigration 3, 147
 AIGAs lasers 5, 66
 Aluminum-silicon interaction 3, 141
 Amateur radio operators 9, 69
 American women in space 9, 64
 American refinement process 10, 132
 Amoral individuals 3, 11
 Amorphous glass-like, iron-based alloy 5, 37; 6, 47
 Amorphous silicon technology 12, 63
 Anemometer 1, 42
 Analog/digital converters 5, 112; 10, 100
 Analytical instruments 2, 123; 10, 76
 Analytical methodology 8, 161
 Analyzer cell 11, 125
 Anik C 9, 64
 Animal metabolic functions 8, 70
 Anion absorption 12, 66
 Anisotropy effects 3, 105; 8, 115
 Antarcic research 1, 42; 2, 78; 11, 80
 Antares laser 11, 37
 Antibodies 9, 17, 42
 Anti-cancer work 12, 11
 Antisatellite anxiety 8, 97
 Antimony 1, 19; 3, 193
 "Anti-noise" research 9, 42
 Antineutrino group 10, 50
 Antiprotons 9, 50
 Antisocial activities 3, 193; 4, 187
 Antitrust laws 5, 136; 8, 46; 10, 31; 11, 50, 92
 Apollo program 6, 76
 Applied Magnetics Laboratory Inc. 10, 115
 Arbitration 10, 31
 Arc lamp 10, 107
 Arc processes for titanium diboride 10, 127
 Argon-fluoride excimer laser 8, 68
 Argonne National Laboratory 10, 115
 Argonaut 10, 50
 Ariane 6, 72; 9, 64
 Armature excitation 3, 115
 Arms control stability 5, 111
 Arms reduction 2, 244
 Arsenic 3, 77; 193
 Articles for IR&D 12, 50
 Artificial bones 6, 60
 Artificial intelligence 1, 37; 4, 17, 116
 Artistic works 4, 29; 9, 31
 Asbestos-free friction products 7, 90
 Asbestos separator materials 1, 37, 70
 Aseptic fluid transfer system 9, 58
 Ash cloud discriminator 1, 62
 Aspheric testing 9, 112
 Assembly line 5, 23; 7, 23
 Asteroid mining base 11, 56
 Astronomical emissions 9, 72
 Astronomical observations 4, 51
 Asynchronous acquisition 5, 120
 Atlantis 1, 44; 8, 54

Atmospheric backscatter 10, 155
 Atom probe field ion microscope 10, 40
 Atomic smasher 3, 88; 9, 49
 Atomic absorption 2, 100; 10, 79
 Atomic analysis 8, 39
 Atomic fluorescence spectrometer 2, 3, 102
 Atomic nuclei 4, 56; 8, 108
 Atomic orbitals 9, 53
 Atomic spacing 11, 132
 Atomic spectroscopy 4, 62
 Atomic vapor laser isotope separation 11, 132
 Atomization cell 10, 63
 ATSS-3 satellite 2, 3, 100
 Attitude control 11, 60; 12, 58
 Auger electron emission 9, 155
 Auger electron spectroscopy 8, 108; 9, 154
 Aurora borealis 2, 66; 4, 41; 5, 85
 Australian science budget 2, 78
 Australian space agency 2, 78
 Automation systems 8, 82; 10, 39
 Automobile 7, 23, 33
 Automobile air conditioning 11, 37
 Auxiliary air 8, 105
 Avalanche photodiode 12, 35
 Avionics system 11, 82

B

Babcock & Wilcox Co. 10, 112
 Backscatter light 7, 37
 Backscattering spectrometry specificity 9, 158
 Backward stimulated Raman scattering spectrometer 4, 80
 Bacterial genetics 8, 77
 Bacterial strain 11, 42
 Bacteriological warfare 10, 208
 Balance of funding 9, 106
 Balance of trade 11, 11
 Baldridge, Malcolm 10, 47
 Bardeen, Dr. John 3, 44
 Barium niobate crystals 9, 86
 Barnard 5 9, 74
 Barrier elimination 3, 122
 Battelle's Marine Research Lab 5, 103
 Battelle Memorial Institute 10, 76
 Battery 1, 37; 4, 70; 9, 35
 Battery-powered cars 9, 35
 Battery technology 5, 66
 Bellows 5, 147
 Beta-delayed, low γ radioactivity 5, 52
 Beta-relaxation process 3, 105
 Biaxial shock testing machine 8, 96
 Bialkali woven fiber 9, 78
 Bionic shape for spacecraft 11, 49
 Bifluoride ion 4, 44
 Big Bang 7, 62
 Binary-cycle technique 2, 74
 Bindings 9, 40
 Bingham plastic flow 7, 78
 Bioanalytical Systems Inc. 10, 87
 Biocatalysts 8, 77
 Biotechnology tools 5, 51
 Bipolar transistors 9, 60
 Birth of a star 8, 60
 Bismuth-rich oxide 4, 124
 Black Brant IX rocket 4, 41
 Black-dot Braille letters 6, 66
 Black hole 3, 92; 4, 95; 5, 204; 6, 155; 156
 Bloch, Felix 8, 162; 11, 62
 Boron 8, 76
 Boron nitrides 8, 113
 Bragg-Brentano parafocusing goniometer 1, 87
 Braille writing 6, 65
 Brake block composition 7, 89
 Breeder fuel 2, 39; 12, 48
 Breeder reactor 12, 45
 British astronomers 2, 51
 Broadband mode 11, 128
 Budget allocations 11, 50
 Budget FY84 4, 76; 11, 54
 Budget FY 85 11, 144
 Buffer layer 4, 62; 9, 158
 Bureau of Mines 10, 124
 Bureaucratic restrictions 6, 46; 9, 82
 Buried-gate design 2, 58
 Burn-through resistance 4, 36
 Burning temperatures 12, 64
 Burnup goal 12, 45
 Buttr potential 7, 90
 Business analysis 5, 138
 Business flowchart 10, 45
 Business plan 1, 33; 12, 23
 Business projections 1, 33
 Buyer Profile 12, 52
 Buying power 3, 92

C

CAD/CAM system 1, 80; 7, 46
 Cable isolators 5, 130
 Calibration drift 2, 103
 California spirit 4, 23; 7, 124
 Callisto 2, 53

Cambridge Ring 4, 74
 Capacitance manometers 10, 162
 Capacitive key 6, 106
 Capital expenses 1, 69; 9, 107
 Capitalism 9, 208
 Carbon fiber band 9, 76
 Carbon-to-carbon connectivities 11, 94
 "Carbonate dip" 9, 98
 Catalytic reactors 8, 62
 Catalytic surface 4, 23
 Cation exchange membrane 9, 98
 Cation-exchange separations 2, 153
 Ceramic ferrite magnets 3, 115
 Ceramic injection molding 7, 77
 Ceramic surge arresters 4, 122
 Ceramics 2, 142; 4, 44; 7, 76
 Cerenkov radiation 3, 85
 Cesium atoms vibration 9, 60
 Challenger 1, 43; 4, 43; 6, 50; 9, 64
 Charge generation (ion) pages 10, 164
 Chemical deactivation 12, 64
 Chemical decontamination system 10, 131
 Chemical degradation 4, 70
 Chemical industry 9, 62
 Chemical ionization (CI) 11, 124
 Chemical matrix effects 2, 100; 5, 141
 Chemical shift 11, 82
 Chemical structures 10, 3; 11, 90
 Chemical suppression 2, 151; 9, 99
 Chemical vapor deposition system 9, 150
 Chinese engineers 3, 43
 Chromatic aberration 9, 113
 Chromatic color 11, 106
 Chromatography-automation system 8, 86
 Chrome-on-glass lens 9, 112
 Chromospheric density 5, 92
 Civil Service promotion 9, 48
 Clean room 2, 185; 7, 3, 95; 11, 141
 Cleaved coupled-cavity laser 9, 82; 12, 35
 Climatic changes 5, 58; 6, 17; 8, 62
 Clinch River Breeder Reactor 9, 49; 12, 45
 Cloning systems 8, 78
 Clutch facing material 7, 90
 CMOS supercomputer 9, 58
 CMOS/SOS 5, 92
 Coal liquefaction process 10, 131
 Coal mines 5, 40
 Coal samples 12, 64
 Coal seam fracture zones 6, 40
 Coal testing technology 9, 39
 Coating machine 11, 141
 Cobalt-enhanced magnetic particle 8, 35
 Coherent Anti-Stokes Raman Scattering 6, 62; 11, 51
 Cohesive energy 8, 60
 Collaborative research groups 8, 48, 58
 Collapsing star 4, 96; 11, 64
 Colliding Beam Accelerator 9, 49; 11, 52
 Collision-induced dissociation 11, 127
 Color graphics 11, 3, 105
 Color-negative photographic system 10, 108
 Color perception 11, 106
 Colorimetric detectors 9, 96
 Columbia 1, 43; 6, 54; 9, 66; 11, 50
 Column diameter 4, 105
 Column life 2, 131
 Columnar prechamber inserts 7, 44
 Combustion synthesis 4, 89
 Comets 7, 50; 9, 206; 11, 60
 Commercial aircraft telephone 4, 35
 Commercial investment 7, 70
 Commercial rewards 10, 58
 Commercial rocketry business 7, 48
 Commercial space ventures 9, 64
 Commercial teletext broadcasting 9, 40
 Communication control 5, 199
 Communications disturbances 2, 66
 Communications network 2, 137; 5, 112
 Communications satellites 1, 43; 3, 37
 Communications 9, 64; 11, 50
 Communicators 2, 166
 Compact magnets 7, 33
 Company funding of R&D 1, 71
 Competitive business 6, 46; 9, 201; 203
 Composites materials 8, 99; 11, 78; 82
 Computer licensing 4, 29
 Computational chemistry 1, 78
 Computer-generated colors 8, 3
 Computer-generated holographic lenses 9, 111
 Computer graphics 9, 114; 12, 40
 Computer R&D 5, 92; 8, 39; 9, 54; 10, 35
 Computer simulation 4, 128; 8, 104
 Computer software technology 5, 97
 Computerized bindings 9, 40
 Computerized production 5, 54
 Computerized shopping service 8, 35
 Conduction devices 4, 70, 123
 Confidentiality agreements 7, 27, 46
 Conformity 5, 204
 Connectivity file 1, 76
 Conquest of disease 9, 17
 Consensus refusal 5, 199
 Consensus management 11, 25
 Constricted double-heterojunction large-optical-cavity diodes 5, 66

Consumer-rights groups 5, 136
 Contaminated water 7, 60
 Continuous culture techniques 8, 78
 Continuous-wave electron accelerator 7, 37
 Contrast ratio 11, 107
 Contrast transfer 2, 109
 Controlled commodities 6, 46
 Controlled-grain boundary 2, 144
 Controlled-pore ceramics 2, 145
 Cooperative research programs 10, 12, 78
 COP meter 12, 58
 Copolymer research 1, 48
 Copper powder 11, 73
 Copying machines 5, 23
 Copyright law 4, 29; 7, 27, 47; 9, 31; 11, 31
 Copyright protection 9, 31
 Coran, Aubert 3, 44
 Corporate culture 10, 25
 Corporate executives 9, 53
 Corporate money 9, 53
 Corporate patent attorney 5, 108
 Corrosion 7, 82; 9, 111
 Cosmic processes 8, 163
 Cosmic rays 3, 85
 Cosmic x-ray sources 12, 58
 Cost reduction 3, 122; 10, 47
 Crab nebula 4, 99
 Creative opportunity 9, 106
 Creativity 2, 25; 3, 25; 5, 203, 204
 Crewe, Dr. Albert 3, 51
 Criminal element 3, 193
 Crimp 9, 76
 Critical technology 8, 54
 Cross coupling 8, 100
 Cross-flow nebulizer 2, 101
 Cross-training millwrights program 4, 42
 Cruise drag 11, 82
 Cruise efficiency 11, 84
 Crustal movements 10, 61
 Cryogenic pumps 4, 142
 Cryogenic refrigeration 8, 56; 11, 56
 Cryotron 3, 58
 Crystal growth processes 9, 149
 Crystallography 6, 71; 9, 159
 Cultural changes 9, 95
 Cultured-cell models 12, 11
 Curse effect 2, 52
 Current densities 10, 35
 Curve fitting 9, 115; 11, 99
 Cutting tool insert 12, 55
 Cyclotron resonance 11, 125
 Cygnus X-1 12, 58

D

DC magnetron controller/power sources 10, 139
 Dark gray tile 4, 96
 Data acquisition and control processor 5, 114
 Data-collection monitor 8, 85
 Data communications 6, 23, 88
 Data management 3, 3; 7, 95
 Data transmission loss 4, 50
 Daughter-ion fragments 11, 127
 De-arsenation processes 3, 77
 Decay mode 5, 52
 Decision-making 3, 138; 5, 199
 Deep-space studies 5, 82
 Defect detection 6, 58
 Defense budget 5, 111
 Defense research 10, 58
 Deficiencies in management 9, 42
 Demagnetization curve 3, 72
 Dendritic structure 11, 112
 Density profile 2, 69; 4, 98
 Deposition machine 11, 141
 Depreciation allowances 5, 134
 Desalination plant 3, 72
 Desaturation 11, 107
 Design and page makeup system 10, 95
 Design patent protection 9, 31
 Desk-top computer 2, 178; 5, 98
 Development inhibitor releaser technology 4, 36
 Diagnostic immunology slide 7, 124
 Diamond 9, 148
 Diamond-turned aspheric optics 9, 113
 Dielectric constant detector 6, 105
 Dielectric materials 2, 142; 6, 97
 Diesel-methanol powered buses 8, 54
 Diesel power station 5, 51
 Diethylarsine 3, 193
 Differential Absorption Lidar 7, 37; 10, 155
 Differential pumping 11, 128
 Diffraction efficiency 9, 110
 Diffusion bonding 12, 75
 Diffusion coatings 12, 40
 Diffusion coefficients 2, 81
 Diffusion-furnace 11, 98
 Diffusion of technology 7, 48
 Digital gaussmeter 10, 115
 Dilatant flow 7, 78
 Diode-mode stabilization 5, 66
 Direct-current plasma 2, 101
 Direct-insertion probe 11, 127
 Direct-view storage tube 11, 116
 Directed-beam refresh tube 9, 116
 Disarmament 2, 244; 4, 182
 Disc brake systems 7, 89
 Disc cameras 9, 35
 Discovery 1, 44; 8, 54; 11, 108
 Display technology 11, 108
 Disposal technologies 7, 60
 Disruptive fluctuations 9, 62
 Distortion correction 9, 84

Distributed-function computer systems

- Distributed processing 9, 88.
- DNA sequencers and synthesizers 9, 35.
- Donnan exclusion 9, 98.
- Donnelly Mirrors Inc. 10, 92.
- Doping 9, 81, 150.
- Doppler radar 5, 58.
- Double-beam, double-monochromator 5, 140.
- Double-beta decay 7, 64.
- Double-exposure technique 1, 86.
- Double quantum frequency 11, 95.
- Dow Chemical Co. 10, 91, 92, 128, 135, 136.
- Dow Corning Corp. 10, 127.
- Drug-delivery pump 10, 91.
- Dynamic mechanical analysis 3, 104.
- Dynamic random access memory chip 11, 56.
- Dynamic response 6, 62.
- Dynamic travel 5, 128.
- Dynamometer 9, 40.

E

- EBR 1 and EBR II 12, 45.
- E-E effect 4, 17.
- ECL-Camtec trigger processing system 10, 98.
- Earth 6, 17, 50, 155; 7, 60; 9, 69.
- Earth's atmosphere 2, 66; 7, 37.
- Earth-orbiting vehicles 6, 72; 7, 37.
- Earth's surface 3, 43.
- Earthquakes 5, 201; 7, 56; 11, 74.
- Earthquake prediction 10, 61.
- East-West trade 6, 47; 7, 45.
- Eastern-bloc nations 7, 45.
- Eastman Kodak Co. 10, 108.
- Eclipses 4, 70; 6, 72.
- Economic forecasting 8, 23.
- Economic indicators 9, 90.
- Economic left 10, 17.
- Economic policies 9, 90.
- Ecosystem stability 6, 74.
- Eddy current testing instrument 10, 116.
- Editorial content 12, 150.
- Education 1, 39; 7, 47; 9, 91, 206, 208.
- Einstein x-ray satellite 3, 71.
- Einsteinium 4, 60.
- Elastic strain 8, 65.
- Elastomeric isolators and bearings 2, 173.
- El Chichon eruption 3, 17.
- Electric current sensor 10, 120.
- Electric Power Research Institute 10, 131.
- Electrical failures 4, 122.
- Electrical insulator material 10, 92.
- Electrical demand 3, 37.
- Electrochemical detection 2, 153; 9, 96.
- Electrodeposition 10, 64.
- Electrofilter 2, 39.
- Electromagnetic force 3, 86.
- Electromagnetic interference 3, 68, 127.
- Electron accelerator 9, 54.
- Electron-beam lithography 2, 56; 9, 131.
- Electron energy 10, 128.
- Electron impact ionization 11, 124.
- Electron microscopy 2, 44; 3, 51.
- Electron neutrino 7, 62.
- Electron spectroscopy for chemical analysis 9, 154.
- Electronic ceramics 3, 142.
- Electronic device testing 3, 127.
- Electronic mail network 2, 43; 6, 3.
- "Electronic newspaper" 9, 40.
- Electronic poll 2, 72, 244; 4, 182, 187.
- Electronic pollution 5, 58.
- Electronic publishing medium 7, 68.
- Electronic suppression 2, 151.
- Electronic transitions 11, 132.
- Electrostatic tandem accelerator 9, 53.
- Element decay 5, 52.
- Elmo Bumpy Torus 7, 33.
- Emitter-coupled logic 2, 161.
- Employee performance 2, 247.
- Employment recovery 7, 37, 72.
- Enigmatic ions 10, 64, 12, 50.
- Energy conservation 3, 37; 12, 3, 78.
- Energy consumption 3, 123; 12, 78.
- Energy costs 12, 3.
- Energy density 3, 115.
- Energy development 12, 45.
- Energy-dispersive x-ray fluorescence 11, 132.
- Energy sweepsakes 12, 45.
- Energy transfer conductivity gages 10, 164.
- Engine analyzer 10, 76.
- Engine shortage 9, 78.
- Engineering education 4, 44; 9, 78.
- Engineering plastics 6, 97; 7, 33; 10, 92.
- Engineering R&D 10, 58.
- Engineering software and hardware 4, 42.
- Environmental exposure 10, 150.
- Environmental pollution 2, 82.
- Environmental profile 8, 105.
- Environmental protection 5, 78.
- Epidemics 8, 19; 10, 17.
- Epitaxial growth 1, 89; 9, 140.
- Epoxy resins 4, 65.
- Erebus 6, 17.
- Error correction coding 9, 54.
- Error detection 7, 102.

Error monitoring and correction

- ERS-1 satellite 5, 78.
- Essay contest 12, 56.
- Etching technique 8, 115; 9, 84, 150.
- Ethanol determination via immobilized enzyme 10, 135.
- Ethical implications of research 2, 86.
- Euroca Vehicle 6, 72.
- European laboratories 3, 86; 9, 82.
- European Orbital Test Satellite 4, 76.
- European technology 7, 68.
- Eutectic transformation temperature 11, 112.
- Event horizon 4, 95.
- Excimer lasers 11, 41.
- Excitation pulse 11, 126.
- Excited atoms 8, 3.
- Exec-engineer gap 10, 45.
- Exhaust-gas pollution 8, 54.
- Exobiology 4, 17.
- Exosat 12, 58.
- Exothermic process 4, 3, 88.
- Expendable rockets 7, 48.
- Experimental design capabilities 7, 94.
- Export control laws 2, 86; 6, 47; 7, 45.
- Export growth (Israel) 2, 80.
- Export licenses 6, 29.
- External vibration 5, 130.
- Extra-column dispersion 4, 112.
- Extraterrestrial intelligence 3, 68.
- Exxon Research & Engineering Co. 10, 132.
- "Eyeball" decisions 7, 95.
- Far stray light 5, 140.
- Fast Flux Test Facility 12, 45.
- Fast pumpdown 11, 142.
- Fast reactor 11, 41.
- Fast-rotating pulsar 11, 64.
- Fault model 2, 46.
- Federal copyright laws 7, 47.
- Federal funding 12, 45.
- Federal grant recipient 9, 107.
- Federal laboratories 9, 107.
- Federal research grants 4, 41.
- Felony 3, 193.
- Fender, Dr. Brian 2, 88.
- Fermentation 4, 36; 8, 78; 12, 84.
- Fermi National Accelerator Laboratory 10, 96, 104, 120, 139.
- Ferrite magnets 3, 115.
- Ferromagnetic contact springs 6, 109.
- Fiber optics 5, 66.
- Fiber-optic cable 9, 39, 82.
- Fiber-optic camera 10, 108.
- Fiber-optic-gyroscope 4, 72.
- Field ion microscopy 10, 40.
- Filter media 7, 47.
- Financial incentives 3, 123.
- Fire code 2, 137.
- Fire command center 6, 35.
- Fire-fighting suits 2, 138.
- Fire management systems 12, 40.
- First Amendment rights 11, 64.
- Fissile material content 11, 56.
- 512-kbit chip 2, 100.
- Flame-atmosphere absorption 8, 97.
- Flame-retardant polymers 12, 74.
- Flow stresses 4, 130.
- Fluid-mechanics computer program 4, 65.
- Fluid resistance 9, 58.
- Fluid transferring 10, 88.
- Fluorometer/photometer analyzer 3, 115.
- Flux density 3, 115.
- Food chain 8, 50.
- Food in space 6, 72.
- Food Aerospace Corp. 10, 100.
- Food Motor Co. 10, 79, 129.
- Foreign competition 8, 46; 10, 60.
- Foreign computer R&D 8, 39.
- Foreign innovation 3, 112.
- Foreign-made products 11, 31.
- Foreign nationals 8, 52.
- Foreign patent protection 12, 29.
- Foreigner restrictions 7, 45.
- Formable metallized plastics 10, 91.
- Formed-metal bellows 5, 147.
- Fossil fuel 1, 37.
- Fourier transform-mass spectrometry 11, 124.
- Fracture mechanisms 6, 40.
- Fracture zones 9, 84.
- Free-electron laser 6, 72.
- Free-flying space carrier 10, 124.
- Free-machining steel 7, 11.
- Free market system 7, 72.
- Free scientific exchange 7, 52.
- Frequency tripling 7, 88.
- Friction research 9, 70.
- Frictionless oscillation 9, 111.
- Fringe space 12, 124.
- Frontier mentality 7, 64.
- Frozen methane 1, 11.
- Fuel cells 7, 76; 11, 37, 84.
- Fuel consumption 11, 41.
- Fuel cycles 11, 79.
- Fuel-efficient aircraft 8, 101.
- Fuel rod storage facility 10, 104.
- Funding levels 10, 45.
- Fuselage configurations 11, 86.
- Fusion energy 2, 60; 5, 43; 7, 33; 9, 35, 84.
- Future articles 12, 150.

G

- Galactic interactions 9, 74.
- Galileo project 3, 64.
- Gamma-ray imaging camera 5, 82.
- Garnymede 2, 53.
- Gas-phase desulfurization process 10, 128.
- Gas pipeline embargo 7, 45.
- Gas-turbine engines 7, 76; 11, 64.
- Gene-cloning patent 5, 51.
- Gene machines 8, 77.
- Gene slicing 2, 96.
- General Electric 10, 92, 99, 100, 104, 111, 112.
- Genetic engineering 2, 96; 8, 76.
- Genetic information 8, 77.
- Genetically engineered microorganisms 5, 51.
- Geniuses 9, 93.
- Geographical frontiers 4, 23.
- Geologic disposal of wastes 7, 60.
- Geomagnetic storms 5, 85.
- Geothermal energy 2, 74; 3, 37.
- Germanium-76 decay 3, 92.
- Gifford Instruments Inc. 10, 88.
- Giotto spacecraft 8, 40.
- Glaciation 11, 17.
- Glass-fiber technology 2, 81; 9, 98; 9, 78.
- Glassy carbon 12, 66.
- Global ocean effects 5, 78.
- Global temperature 8, 62.
- Glomar Challenger 2, 64; 8, 62.
- Gold foil 3, 43; 6, 155.
- Gold Inc. 10, 104, 107.
- Grain boundaries 2, 142.
- Grain embargo 7, 45.
- Grain refining 11, 112.
- Graphite composites 4, 65; 9, 78; 11, 82.
- Graphite fibers 8, 104; 7, 89; 9, 78.
- Graphite mirror 12, 50.
- Graphite reactor 3, 46.
- Gravitational cohesion 8, 162.
- Gravitational energy 6, 158; 11, 62.
- Gravitational field 4, 95; 8, 156.
- Gravitational red shift 8, 162.
- Gravitational suppression factor 4, 99.
- Gravity-free environments 6, 71; 9, 68.
- Gravimetric gradient 8, 306.
- Gray, Dr. John 5, 44.
- Group transfer polymerization 11, 54.
- Growth-from-melt technique 9, 140.
- Habitat programs 7, 56.
- Halley's comet 7, 124; 8, 40; 10, 45.
- Handicapped persons 6, 65.
- Hannay, Dr. N. Bruce 5, 53.
- Hannover Fair 7, 88.
- Harmonic motion 4, 58.
- Harrick Scientific Corp. 10, 84.
- Hayward Fault 3, 17.
- Hazardous wastes 4, 82; 9, 70; 11, 49.
- Hearing aid 3, 44.
- Heat emissions 11, 60.
- Heat exchangers 12, 70.
- Heating system efficiency 12, 3, 78.
- Heat-pipe sandwich panel 10, 123.
- Heavy ions 12, 50.
- Helical cable isolators 2, 174; 5, 129.
- Helicopter design 11, 86.
- Helioscope 5, 76.
- Helium-3 emission 4, 65.
- Helix support rods 6, 114.
- Heterogeneous catalysts 8, 110.
- Hewlett-Packard Co. 10, 79, 95, 99.
- High-frequency, high-power capacitors 10, 103.
- High-frequency semiconductor 10, 140.
- High-performance thermoplastics 6, 97.
- High-performance x-ray spectrometry tube 5, 43.
- High-power absorption 7, 89.
- High-pressure etching 8, 115.
- High-pressure sodium vapor light 10, 46.
- High-pressure wind tunnel 11, 68.
- High-rise buildings 2, 136.
- High-speed columns 3, 132.
- High-speed communication 8, 117.
- High-speed digital bus 5, 113.
- High-speed digital camera 8, 39.
- High-technology exports 9, 45.
- High-technology investments 3, 70.
- High-technology R&D 8, 40.
- High-technology starts-up 1, 33.
- High-technology trade 6, 48.
- High-temperature optical fiber 10, 120.
- High-temperature structural material 7, 76.
- High-temperature-tolerant electronic devices 9, 148.
- High-temperature vapor deposition 6, 113.
- High-voltage direct current converter 4, 123.
- High-voltage stations 9, 54.
- High-voltage surges 4, 123.
- Hiring practices 9, 48.
- Hitachi Ltd. 10, 84.
- Holod, Donald 3, 78.
- Hollow-cathode lamps 2, 101.
- Hollow-fiber suppressor 9, 98.
- Holographic camera system 10, 107.
- Holographic lenses 9, 110.
- Homopolar generator 10, 104.
- Hood designs 8, 104.
- Hoppe, Manley 7, 38.
- Horizon sensor 11, 60.

Horizontal acceleration

- Hot cathode ionization gages 10, 167.
- Hot flow path 7, 76.
- Hot isostatic pressing 8, 73.
- Hut 11, 106.
- Hughes Aircraft Co. 10, 123.
- Human color perception 11, 105.
- Human factors engineering 5, 118.
- Hybrid Test Vehicle 9, 35.
- Hydrogen bomb 4, 60.
- Hydrogen cloud 4, 56.
- Hydrogen exchange reaction 7, 54.
- Hydrogen fusion process 4, 99.
- Hydrogen nuclei 11, 91.
- Hydrotreater 4, 35.
- Hyperbolic velocity 9, 206.
- Hypersonic aircraft 11, 88.
- IR radiation thermometer 5, 80.
- Ice detection 2, 53.
- Ice satellites 2, 52.
- Illegal technology diversion 7, 45, 46.
- Illiteracy 9, 92.
- Image-converter streak camera 9, 39.
- Image coupler 4, 36.
- Image current 11, 125.
- Imaging of surface topography 5, 74.
- Immobilized enzyme column reactor 4, 105.
- Immobilized enzymes 8, 78.
- Impact diodes 5, 3.
- Incinerators 11, 50.
- Indiana University 10, 79.
- Industrial environment 11, 95.
- Industrial extension services 10, 56.
- Industrial funding 9, 106.
- Industrial inspection 6, 58.
- Industrial policy 11, 11, 50.
- Industrial pollutants 8, 46.
- Industrial productivity 5, 53.
- Industrial R&D 3, 80; 6, 45; 10, 58.
- IR&D Scientist of the Year 3, 44, 51.
- 10, 143; 11, 90.
- Industrial revolution 9, 92.
- Industrial safety 2, 82.
- Industry improvement 7, 122.
- Industry research contracts 5, 134; 8, 48.
- Industry/university interaction 5, 134; 6, 48.
- Inertial confinement fusion 5, 37; 11, 37.
- Inertial upper stage (IUS) 6, 50.
- Infinity 3, 193.
- Inflation 1, 69; 3, 97; 5, 123; 9, 25, 90.
- Information age 8, 40.
- Information storage 7, 66; 8, 58.
- IR catalog of the sky 11, 56.
- Infrared telescope 2, 51; 5, 92; 9, 72.
- Inflated Corp. 11, 56.
- Injection molding 7, 45, 78.
- Injection volume 4, 195.
- Inland Steel Research Laboratories 10, 184.
- Inner-shell atomic structure 10, 133.
- Innovation 2, 31; 3, 25, 112; 4, 188; 10, 136.
- 10, 84; 5, 39; 9, 106; 10, 60.
- Inorganic insulating foam 10, 112.
- In-seam seismic technique 6, 40.
- Insertion sequences 8, 77.
- Instant film 9, 35.
- Institutionalized mediocrity 8, 94.
- Instrument purchasing 12, 52.
- Instrumentation Laboratory Inc. 10, 79, 88.
- Insulated gate rectifier 3, 43.
- Insulated gate transistor 10, 35, 100.
- Integral rocket/rampjet (IRR) 11, 86.
- Integrating capacitor 10, 167.
- Integrating protocol software 8, 94.
- Intellectual property rights 11, 31.
- Intelstat 4, 70.
- Interaction of ocean and atmosphere 5, 80.
- Interactive graphics 9, 114.
- Interference effects 11, 133.
- Interfacial turbulence 4, 99.
- Interference pattern 8, 66.
- Interferometry 9, 74, 113.
- Intermediate vector boson 3, 86; 7, 64.
- Intermetallic mu phase 7, 83.
- Internal crystalline architecture 11, 112.
- International computer network 5, 53.
- International political tensions 11, 92.
- International trade fairs 5, 53; 7, 68.
- International trade practices 6, 48.
- Interplanar atomic spacing 1, 86.
- Intricate Machine & Engineering 10, 111.
- Inventiveness 3, 25, 110; 5, 134; 7, 126; 8, 49.
- Inventors 3, 190; 5, 203, 204.
- Inverter 2, 72.
- Investment credits 12, 86.
- Iodine-stabilized laser 9, 60.
- Ion beam-induced desorption 8, 109.
- Ion-beam sputtering 9, 155.
- Ion chromatography 2, 151; 8, 108.
- Ion cyclotron resonance (ICR) 11, 124.
- Ion exclusion 2, 155.
- Ion implantation system 10, 132.
- Ion pair chromatography 2, 130.
- Ion-probe mass spectrometry 7, 60.
- Ion scattering spectroscopy 8, 108.
- Ionization control chromatography 2, 132.
- Ionization interferences 11, 134.
- Ionosphere 2, 86.
- Irradiated gemstones 3, 194.
- Isocratic separation 4, 119.

Index to Volume 25 (1983) of IR&D

continued

Isocyanatoethyl methacrylate 10, 91.
Isolation requirements 5, 120.
Isotope separation 9, 84; 10, 63.
Isotopic dating 8, 62.
Israel's high technology 2, 44, 80; 12, 40.
Israeli R&D 2, 44, 80.

J

Japanese competition 7, 11.
Job formation 2, 31.
Joining optical fibers 2, 81.
Josephson junction 3, 58.
Jumping genes 11, 49.
Junction depth 3, 141.
Jupiter Effect 3, 17; 5, 17.
Jupiter's satellites 2, 53.

K

K-Resin polymers 6, 104.
"Kevlar" 4, 66; 9, 78; 11, 82, 86.
"Kevlar"-based materials 11, 82.
Keyboard development 6, 108.
Keyword Thesaurus 4, 41.
Kinetic energy 8, 120.
Knowledge-based system 5, 87.
Krypton atom v'bration 9, 60.
Krypton lamp 9, 60.
Ku-band radar system 7, 45.

L

Lab automation system 8, 82.
Lab space 3, 120.
Labcon Central '83 5, 85; 6, 36; 8, 91.
Labcon New England 11, 70.
Labcon West 8, 40; 10, 39.
Laboratory wastes 11, 49.
Laboratory communications network 10, 96.
Laboratory information management system 8, 83.
Laboratory of the Year 1, 54; 5, 97; 11, 70.
Lab safety procedure 11, 50.
Laboratory wastes 11, 49.
Large electron-positron accelerator 3, 88.
Large Magellanic Cloud 3, 92; 4, 51.
Large-scale integration (LSI) 2, 60.
Laser balancing system 10, 108.
Laser beams 9, 84.
Laser description 9, 156.
Laser diodes 5, 56.
Laser-doppler anemometry 6, 62.
Laser-fiber-optic gyroscope 4, 72.
Laser fusion 11, 37.
Laser ionization mass spectrometry 9, 154.
Laser light pulsing 12, 35.
Laser measurement system 10, 61, 154.
Laser microprobe line profiles 9, 156.
Laser microscope 9, 156.
Laser multiphoton ionization 11, 124.
Laser-optical instrumentation 11, 51.
Laser optoelectronic spectroscopy 10, 156.
Laser video-disk systems 7, 66.
Lattice-matched materials 8, 65.
Lava tube 5, 201.
Lawrence Livermore National Laboratory 10, 103.
Lead-acid battery 10, 104.
Lead fire assay method 2, 100.
Lead poisoning 7, 19.
Leaf springs 9, 70.
LeCroy Research Systems 10, 100.
Ledge tool 12, 55.
Leg injuries from skiing 9, 40.
Legal prior art 8, 29.
Legal protection 7, 28.
Legal technicalities 9, 106.
Legal transfers of technology 7, 46.
Lens aperture aberrations 3, 51.
Leptons 3, 88.
Lethal force 1, 11.
License agreement 7, 27.
Licensing of patents 5, 51.
Lidex Corporation Ltd. 10, 76.
Light helicopter program 11, 86.
Light pollution 10, 46.
Light-sensitive thyristor 9, 54.
Lightning strikes 2, 46; 4, 123.
Lightwave communications 9, 84; 12, 35.
Lightweight motor system 12, 29.
Limited disclosure 7, 37.
Linear accelerator 9, 50.
Linear collider 9, 50.
Linear imaging charge-coupled device 4, 72.
Liquid chromatography column 4, 101.
Liquid flowmeter instrument 10, 135.
Liquid helium transfer line 10, 139.
Liquid scintillation counting 2, 81.
Lithium-drifted silicon detector 11, 134.
Liton Industries 10, 108.
Local-rotor pumps 4, 141.
Local area network 4, 74; 6, 88.
Logic analyzer 5, 118.
Logic gates 9, 81.
Long-distance microscope 10, 111.
Long-term capital spending 1, 69.
Long-term precision 10, 116.
Los Alamos National Laboratory 10, 116.
Low-emission combustor 11, 80.

Low-frequency repetitive funnel 9, 42.
Low-Earth-orbit spacestations 6, 50, 72.
Low-energy electrons 12, 50.
Low-energy telescopes 12, 58.
Low-pressure sodium vapor light 10, 46.
Low-temperature memory systems 5, 58.
Low-temperature plasma 3, 53.
Lunar polar orbiting spacecraft 6, 76.
Lunar stations 6, 76.
Lynds 1642 9, 74.

M

MTS Systems Corp. 10, 87.
MX missiles 4, 182.
Machine software 5, 53.
Magnetic confinement fusion 10, 35.
Magnetic contamination 11, 91.
Magnetic control surface technology 1, 58.
Magnetic field 2, 66; 6, 64; 7, 33; 8, 116; 11, 91, 125.
Magnetic flux 3, 114.
Magnetic fusion program 5, 43; 10, 35.
Magnetic levitation 8, 46.
Magnetic recording medium 8, 35.
Magneto-optic display 10, 108.
Magnetohydrodynamics (MHD) 2, 72.
Magnetron ion etching 8, 115.
Magnified depth profiles 8, 109.
"Mailbox" 6, 3.
Malignancy 12, 11.
Mammalian cells 8, 78.
Man-made pollution 8, 48.
Mapping x-ray spectrometer 2, 66.
Marine and air transportation 9, 70.
Marine ecosystems 5, 103.
Mariner Mark 2 7, 50.
Marketing myopia 6, 23.
Mars 6, 72; 7, 50; 9, 64.
Mary Rose 8, 45.
Masked multichannel scaler 2, 160.
Mass measurement 11, 204.
Mass murder 3, 193.
Mass-produced automobiles 5, 23.
Mass-selective detector 10, 79.
Mass transformation 4, 98.
Masscomp 10, 99.
Massive solar companion 6, 17; 9, 205.
Massless neutrino 7, 82.
Materials handling center 5, 54.
Materials processing 6, 71; 9, 64, 84.
Materials technology 4, 42; 5, 58; 6, 71.
Mathematical tornado model 3, 76.
Matsushita Electric Industrial 10, 103, 115.
Maxwell Laboratories Inc. 10, 103.
McClintock, Barbara 11, 49.
McDonald Douglas Corp. 10, 96.
Measurement of hydrogen cyanide 10, 136.
Measurements of the Sun 5, 92.
Mechanical Technology Inc. 10, 108.
Mechanical vibration 8, 98.
Medical imaging system 5, 85.
Medical prostheses 6, 60.
Medicine 4, 36; 9, 84.
Mediocrity 7, 47; 9, 94.
Mellen Co. Inc. 10, 132.
Melt cooling 11, 112.
Membrane switch keyboards 6, 109.
Memory storage 5, 69.
Mentor O&O Inc. 10, 88.
Metalizing 12, 40.
Metal-organic chemical vapor deposition 1, 89; 8, 66.
Metal oxide semiconductor technology 3, 141; 9, 81.
Metal vapor deposition 3, 43, 53.
Methanol-fueled transit bus 12, 35.
Method calibration 8, 86.
Methods-development 4, 116; 8, 86; 11, 134.
Microballoon-cable combinations 9, 39.
Microbreath column 4, 114.
Microelectronics Instruments Corp. 10, 76.
Microsecond-resolution radiation pyrometer 10, 119.
Microwave dielectric ceramics 10, 115.
Microwave heating 10, 64.
Microwave power developments 4, 44.
Microwave signals 5, 3.
Miles Laboratories Inc. 10, 59.
Military technology transfer 6, 46.
Milky Way 3, 71; 5, 76; 9, 74; 11, 60.
"Mini-tokamak" 3, 52.
Miniature solid-state laser 9, 82.
Minimal SU(5) 3, 85.
Minimization programs 1, 77.
Minnesota, University of 10, 88.
Mirrors for lasers 9, 84.
Mirror fusion technology 7, 33.
Mismanagement 9, 42.
Mitre Corp. 10, 100.
Mobile-phase consumption 4, 110.
Mobile-phase delivery 3, 130.
Modeling system 1, 74.
Mold cooling analysis program 10, 99.
Mold cooling time 7, 46.
Molding cycle 7, 79.
Molecular beam epitaxy 6, 116; 8, 66.
Molecular behavior 11, 91.
Molecular laser isotope separation 10, 63.
Molecular spectra 10, 144.

Molecular structure of antibodies 9, 42.
Molecular weight distribution 6, 104.
Molten magma 5, 201.
Molten metal cooling curve 11, 112.
Molytek Inc. 10, 135.
Momentum transfer 10, 163.
Monetary exchange rates 11, 92.
Monetary policy 9, 100.
Monochromatic light 11, 106.
Monoclonal antibody 8, 79.
Monolayer phase changes 4, 56.
Monsanto Co. 10, 112.
Monster star 3, 51.
Mont Blanc tunnel 4, 86.
Moon 6, 76; 9, 64, 208.
Moon's shadow 5, 92; 6, 72.
Motion sickness 1, 43.
Motorized cars 7, 95.
Mount St. Helens 2, 17.
Multichannel infrared radiometer 5, 78.
Multichannel scaler 5, 189.
Multi-dimensional numerical matrix 7, 72.
Multidisciplinary space 3, 121.
Multilateral export control policy 7, 46.
Multi-legged robot 5, 37.
Multiple buses 5, 113.
Multiplet patterns 11, 93.
Multisolvant methodology 10, 119.
Multistage pumps 4, 142.
Multistatic radars 2, 53.
Multivire proportional counter 5, 82.
Mylon furnace 10, 132.
Mythology 4, 17.

N

NASA Goddard Space Flight Center 10, 139.
NASA Langley Research Center 10, 123, 142.
NASA Lewis Research Center 10, 100.
National Bureau of Standards 10, 119.
National Electrostatics Corp. 10, 135.
National Medal of Technology 10, 117.
National security 4, 187; 6, 46; 7, 45; 8, 52; 161; 9, 91.
Near stray light 5, 140.
Neptune 5, 74; 9, 206.
Neuroscience 5, 62.
Neutrino detection system 7, 64.
Neutrino interactions 3, 86.
Neutron activation 3, 193.
Neutron imaging detector 10, 115.
Neutron scattering research 2, 88.
Neutron stars 3, 92; 5, 204.
Newport Corp. 10, 107.
Newsletter service 6, 39.
Nickel cadmium batteries 4, 70.
Nickel-chromium-molybdenum compositions 7, 82.
Nickel-copper alloy coating 10, 124.
Nickel electrodes 4, 70.
Nickel hydrogen battery cells 4, 70.
Nickel-zinc battery 5, 66.
NIFE aluminate 10, 124.
Niobium-titanium conductor 7, 33.
Niobium-titanium rotor windings 5, 37.
Nitinol wire 9, 54.
Nitride synthesis 4, 90.
Nitrogen oxides 4, 48.
Nobel Prize 7, 124; 9, 40, 72; 11, 49, 90.
Noise 2, 187; 4, 42; 11, 79.
Nonabsorbing mirrors 5, 71.
Nondestructive materials 7, 89.
Noncontacting suction force generator 10, 123.
Noncrimping carbon woven fabric 9, 76.
Nonelectronic hearing aid 3, 44.
North American Philips Corp. 10, 123, 139.
Nuclear accidents 1, 37; 3, 193; 9, 39.
Nuclear breeder 2, 39.
Nuclear burnup 12, 46.
Nuclear force 3, 86; 5, 52.
Nuclear fuel rods 11, 73.
Nuclear magnetic resonance 6, 62; 10, 3.
Nuclear power plant 1, 41; 9, 39; 10, 35.
Nuclear precession 11, 94.
Nuclear war 3, 193; 4, 182; 6, 11; 8, 161.
Nuclear waste disposal 1, 42.
Nuclear waste storage 7, 60.
Nuclear weapons 4, 182; 6, 11.
Nucleation barrier 11, 114.

O

Oak Ridge National Laboratory 10, 84.
Offshore oil 7, 56.
Oil prices 4, 35.
Oil production platform 1, 74.
Oil shale 3, 77.
One-discrete-element photosensitive detector 4, 72.
On-line vacuum process measurements 10, 167.
O'Neill, Dr. Hugh 2, 46.
Optical system analyses 8, 161.
Optical frequency measurement 9, 60.

Optical/holographic techniques 9, 84.
Optical video-disk system 7, 66.
Optoelectronic devices 8, 67.
Optrode 10, 157.
Oral biomaterials evaluation 10, 87.
Orbital transfer technology 4, 49; 6, 76.
Orbital transfer vehicle (OTV) 4, 49.
Orbiting manufacturing facility 6, 71.
Orbiting space station 8, 35.
Orbiting space structures 6, 76; 8, 35.
Orbiting telescope 4, 51.
Origin of the universe 9, 72.
Orion Research Inc. 10, 91.
Outer atomic layers 8, 110.
Ownership interest 1, 33.
Oxide defects 9, 56.
Oxidizing agents 7, 82.
Oxidizing atmospheres 6, 114.
Oxygen production 8, 76.

P

PCB disposal method 6, 35.
PCB Piezotronics Inc. 10, 119.
PPG Industries 10, 127.
pH measurement 2, 130.
Pacemaker monitoring device 4, 42.
Packed hollow fibers 9, 96.
Palapa B 9, 64.
Palladium diffusion cell 9, 150.
Palmdale Buge 7, 47.
"Paper" graphite 7, 90.
Partially stabilized zirconia (PSZ) 6, 58.
Particle accelerator 9, 84.
Particle beam fusion accelerator 5, 37.
Particle-beam weapons 6, 11.
Particle physics 5, 52.
Particulate control 7, 95; 8, 115.
Passenger survivability 4, 36.
Passive isolation system 2, 172.
Patent agreements 5, 203.
Patent applications 8, 29.
Patent examiners 5, 137.
Patent infringement 3, 31; 10, 31.
Patent law 4, 29; 5, 29, 204; 9, 31.
Patent licenses 7, 46.
Patent litigation 10, 31.
Patent rights 5, 51.
Patent protection 7, 27; 12, 29.
Patent rights 2, 31.
Patentability 3, 31.
Patents 3, 25, 110, 190; 5, 136, 203; 7, 27; 9, 84, 107.
Pattern fidelity 8, 115.
Pauling, Linus 3, 11; 9, 40.
Peak electric demand 3, 37.
Peak elution time 2, 131.
Pebble bed 12, 46.
Pennsylvania State Univ. 10, 140.
Performance-based reward systems 9, 88.
Permanent magnet dc motor 10, 35.
Personal computer business 5, 23.
Personnel policies 9, 48.
Personnel transfer capsule 7, 56.
Perspiration scalding 6, 35.
Phase conjugate optic techniques 9, 84.
Phase grating 9, 112.
Phosphine 9, 81.
Phosphoric acid fuel cells 9, 66.
Phosphorus-26 5, 52.
Photochemical process 8, 68.
Photochemical vapor deposition reactor 10, 136.
Photocopier 6, 65.
Photocopying guidelines 12, 45.
Photocides 7, 54.
Photodissociation 7, 54.
Photoelectron energy 9, 155.
Photographic wastes 2, 44.
Photoionization 7, 54.
Photolithography 8, 68; 9, 112.
Photomicroscopy 2, 106.
Photovoltaic solar cell 1, 48.
Photovoltaic technology 12, 63.
Pilot thyristor 9, 54.
Pioneer 10 5, 74.
Pipeline plow 11, 74.
Piracy of computer data 7, 72.
Pittsburgh Conference on Analytical Chemistry & Applied Spectroscopy 2, 115; 4, 11; 5, 43; 7, 68; 12, 39.
Planar-laser-induced fluorescence 10, 156.
Planetary atmosphere 4, 49.
Planetary exploration program 7, 50.
Planetary nebula 9, 74.
Planetary Observer spacecraft 7, 50.
Plasma separation 10, 63, 88.
Plasmids 8, 77.
Plastics processing equipment 8, 104.
Plate tectonics 2, 64.
Platlet-shaped particle 7, 77.
Pluto 12, 44.
Plutonium fuel 12, 45.
Plutonium plasma 10, 63.
Pneumatic cushioning 11, 142.
Polarization of XUV output 7, 54.
Police power 1, 11.
Police review committees 8, 52.
Pollutants 1, 47; 12, 35.
Pollution 12, 35.
Polymerization 11, 54.
Polyacetal-elastomer alloys 7, 33.
Polyacrylonitrile precursor fibers 9, 76.
Polycrystalline SiC 8, 150.
Polycrystalline structure 9, 58.
Polyetherimide 8, 66.
Polymer permeability 2, 80.

Index to Volume 25(1983) of IR&D

continued

Polynuclear aromatic hydrocarbons 4, 102.
 Polysilicon 9, 81.
 Polytech Co. 10, 92.
 Polyurethanes 6, 96.
 Polyvinyl chloride sandwich sheets 9, 58.
 Portable field shelter 11, 60.
 Position and orientation measurement 10, 95.
 Position-sensitive scintillation detector 1, 84.
 Position-pi meson mechanism 3, 86.
 Post-reaction combustion 4, 90.
 Potable water 3, 72.
 Potential acuity meter 10, 88.
 Poverty 9, 92.
 Power capacitor test apparatus 10, 115.
 Power of government 4, 187.
 Power semiconductor switch 3, 43.
 Power shift transmission 7, 90.
 Power supply 10, 68; 11, 66, 106.
 Power thyristors 9, 54.
 Precipitation hardening 11, 112.
 Precollege education 1, 39.
 Preferential sputtering 8, 109.
 Repackaged problem-solver programs 4, 129.
 Pressure differential 4, 139.
 Prevalucination inhibitor (PVI) 3, 44.
 Priestly Medal 1984 9, 40.
 Primordial gas 4, 98.
 Printed circuit board material 10, 112.
 Prior art 8, 29; 10, 31; 12, 29.
 Prism liquid cell 10, 84.
 Prismatic panel 2, 43.
 Private initiative 11, 50.
 Private rocketry enterprises 7, 48.
 Private sector financing 10, 58.
 Probe beam 9, 94.
 Process control 2, 82; 9, 35.
 Process gas chromatography (PGC) 6, 102.
 Process liquid chromatography (PLC) 6, 102.
 Process optimization 7, 95.
 Process simulators 7, 95.
 Process to decontaminate PCB transformers 10, 127.
 Processes and systems 10, 127.
 Product development 1, 25; 4, 188; 9, 203.
 Product liability suits 5, 136.
 Product quality 6, 104.
 Production control 6, 104.
 Production facilities 6, 71.
 Production tools and equipment 10, 132.
 Productivity 2, 11; 3, 80; 4, 118; 7, 94; 9, 91; 11, 113, 135.
 Productivity growth 4, 187; 6, 39.
 Productivity policy 6, 39.
 Productivity standards 9, 47.
 Professional communicators 2, 166.
 Professional competence 5, 137.
 Profit motive 9, 107.
 Profitability 11, 31.
 Programmed transfer modes 5, 113.
 Programmable motor 10, 35.
 Project Universe 4, 74.
 Property degradation 9, 76.
 Property taxes 9, 203.
 Propan propulsion 11, 82.
 Proportional counter array 12, 58.
 Proposal checklist 3, 139.
 Proprietary information 2, 31; 7, 46.
 Proprietary protection 7, 27.
 Prosperity 9, 90.
 Protocol software 6, 88.
 Proton 3, 85; 5, 52.
 Proton-antiproton collision research 3, 64.
 Proton beams 9, 50.
 Proton decay 3, 85.
 Proton-proton collisions 9, 49.
 Proton spectrum 11, 92.
 Protonated carbons 11, 92.
 Protostars 9, 74; 11, 60.
 Proximity exposure effects 9, 112.
 Pseudogravitational field 4, 97.
 Pseudoplastic flow 7, 78.
 Pseudoscientific speculation 9, 206.
 Public awareness 1, 47.
 Public education 9, 92.
 Public safety 1, 11.
 Pulsar 4, 54; 11, 64.
 Pulse thermography 6, 58.
 Pulsed-laser light 4, 80; 7, 37.
 Pulsed nozzle 7, 52.
 Pulltrusion 8, 35.
 Pump limiter 10, 35.
 Purchasing activities 12, 52.
 Push-button telephone 4, 187.
 Pyrolytic boron nitride (PBN) 6, 113.

Q

Quadrupole "band magnetron" 8, 116.
 Quadrupole-focusing 6, 56.
 Quake-proof building design 7, 56.
 Qualification testing 7, 85.
 Quality assurance 5, 197; 7, 85; 10, 151.
 Quality index 11, 112.
 Quality research 9, 47.

Quantum electrodynamics 1, 39.
 Quantum electronics 9, 82.
 Quasars 4, 95; 8, 162; 9, 72; 11, 62.
 Quasiparticle injection tunneling effect 3, 58.
 Quenching 7, 55.
 Questar Corp. 10, 111.
 Queue maintenance 8, 86.
 Quateron 3, 58.

R

R&D effort 10, 60.
 R&D expenditures 2, 11; 4, 187; 5, 61; 9, 40; 12, 10, 69.
 R&D funding 1, 69; 3, 62; 4, 76; 5, 56; 7, 70; 10, 58.
 R&D gold nuggets 11, 80.
 R&D industry 9, 200; 12, 52.
 R&D laboratories 10, 40.
 R&D management 3, 3; 5, 138.
 R&D productivity 7, 94.
 R&D programs 3, 136; 5, 44.
 R&D proposals 3, 36.
 R&D salaries 3, 97; 5, 122.
 R&D scientists 3, 11; 5, 199; 6, 155.
 R&D tax credit act 9, 39.
 Race track microtron 7, 37.
 Radial thermal gradients 3, 133.
 Radiation damage 6, 116.
 Radiation detectors 11, 134.
 Radiation temperature 5, 78.
 Radio frequency circuits 10, 144.
 Radio frequency (RF) interference 3, 127.
 Radio frequency structure 7, 37.
 Radio management system 11, 82.
 Radiation effects 7, 52.
 RF shielding 3, 127.
 Radio telescope 2, 78; 3, 68; 4, 54; 9, 72.
 Radioactive decay 5, 52.
 Radioactive gems 2, 249.
 Radioactive wastes 7, 80; 9, 72; 10, 52.
 Radioluminescent lights 11, 73.
 Radium complex 12, 35.
 Railroad business 6, 23.
 Raised-relief maps and drawings 6, 65.
 Ramjet engine 11, 66, 68.
 Range prediction device 5, 66.
 Rapid scan ICR 11, 124.
 Rapidly rotating residual nuclear system 9, 53.
 Rare earth-cobalt magnets 3, 114.
 Rare-earth nuclei 9, 53.
 Reactive ion etching (RIE) 8, 115.
 Reactor fuel 2, 39.
 Reactor safety 12, 46.
 Recession 3, 97; 4, 11; 5, 122; 9, 200.
 Recirculating magnetic bearing 10, 123.
 Recirculating piston pumps 4, 141.
 Recognition for inventors 3, 190; 5, 203.
 Recombinant DNA 2, 96; 8, 76.
 Recording beams for holographic lenses 9, 111.
 Recruitment advertising 12, 35.
 Recycling 6, 74.
 Reed switches 6, 109.
 Refracting telescopes 4, 54.
 Refraction-induced color 4, 54.
 Refractive index detectors 9, 96.
 Refractory nitrides 4, 3, 88.
 Regression analysis 9, 114.
 Regulation of hazardous material transport 9, 70.
 Relativistic electrons 9, 84.
 Release mechanism 9, 40.
 Remote detector 10, 11.
 Remote fiber fluorimetry 10, 157.
 Renovation costs 3, 123.
 Reproduction of engineered microorganisms 5, 51.
 Research & development climate 5, 134; 6, 153.
 Research briefings 5, 56.
 Research center 5, 54.
 Research fellowships 5, 44.
 Research funding 5, 199; 9, 107.
 Research Initiatives for Minority Institutions 4, 78.
 Research parks 10, 54.
 Research reactor 12, 46.
 Research universities 7, 11.
 Resistance temperature detectors 11, 98.
 Resistance thermometer bridge/micro-ohm meter 10, 120.
 Resolution map 4, 119.
 Resource Conservation and Recovery Act 9, 116.
 Response surface methodology 9, 38.
 Response time 4, 113.
 Restriction enzymes 8, 77.
 Retraining of personnel 10, 39.
 Retrieving a satellite from orbit 9, 64.
 Retro-reflectors 10, 61.
 Returns on investment 2, 11; 9, 205.
 Return of taxpayer's investment 9, 47.
 Reverse billing 12, 75.
 Reverse-osmosis desalination 3, 72.
 Reversed-phase chromatography 2, 155.
 Rhomboid-shaped unit cells 3, 130.
 Ribbon silicon 12, 63.

Ride, Sally 9, 64.
 Ring-laser gyro 4, 72.
 Robot arm 9, 64.
 Robotics and automation 4, 42, 44; 5, 37; 6, 35; 12, 39.
 Rocket propulsion 11, 68.
 Rocking piston pump 4, 142.
 Rockwell International 10, 132.
 Rodless cylinder 11, 141.
 Roots pumps 4, 141.
 Rotary drilling hose 1, 37.
 Rotary engine 5, 37.
 Rotary screw pumps 4, 141.
 Rotational behavior of nuclei 9, 53.
 Rotational speeds 7, 77.
 Rotational stress 9, 53.
 Royalty-free license 2, 31.
 Rule-based formalism 5, 94.
 Russian microprocessor 9, 11.
 Russo, Vincent 9, 42.
 Rutherford backscattering spectrometry (RBS) 9, 154.

S

SAMA Award 1983 7, 38.
 SAT scores 5, 204.
 SSC collider 11, 52.
 Sabbatical programs 5, 135.
 Safety 8, 104.
 Safety hazards 3, 53; 10, 50.
 Safety record 9, 70.
 Salary survey 3, 97; 5, 124; 9, 200.
 Salary system limits 9, 48.
 Salt osmotic pressure 3, 74.
 Salvat 7, 1, 44; 2, 51; 6, 50, 9, 64.
 Sample return craft 7, 52.
 Sampling procedure 12, 64.
 Sampling systems and monitors 10, 135.
 Satellite 5, 37; 78; 10, 45.
 Satellite batteries 4, 70.
 Satellite programs 4, 129.
 Satellite tracking stations 4, 76.
 Satellite transponder 3, 37.
 Saturation 11, 106.
 Saturation diving 7, 56.
 Saturn 7, 52.
 Saturn-Titan probe 4, 49.
 Scanning acoustic microscopes 8, 35.
 Scanning diffractometer 1, 86.
 Scanning inelastic tunneling spectroscopy 5, 74.
 Scanning transmission electron microscope (STEM) 3, 51.
 Scanning tunneling microscopy (STM) 5, 72.
 School system 4, 76.
 Science education 1, 39.
 Science needs 4, 76; 7, 47; 8, 52.
 Science-trained professionals 9, 94.
 Scientific and academic freedoms 8, 52.
 Scientific exchange 6, 29; 48; 7, 45.
 Scientific inquiry 5, 17.
 Scientific leadership 9, 48.
 Scientific literacy 7, 47.
 Scientific research 9, 11.
 Scientific speculation 9, 206.
 Scientists 3, 11; 5, 199.
 Scientists of the Year 10, 11, 143; 11, 80.
 Scintillation-coated glass bundle 10, 95.
 Sclerex Corp. Ltd. 10, 95.
 Scram jet 11, 68.
 Seafloor research habitat 7, 56.
 Search for extraterrestrial intelligence 3, 68.
 Seawater 3, 72.
 Secondary effects 8, 110.
 Secondary electrons 8, 116.
 Secondary-ion extraction efficiency 9, 155.
 Secondary ion mass spectroscopy 8, 108; 9, 154; 10, 84.
 Secondary phases 11, 112.
 Secrecy in research 9, 107.
 Security system 4, 36; 8, 85; 7, 45.
 Seed money 9, 11.
 Seismic qualification 8, 100.
 Seismic reflection profiles 2, 64.
 Seismic waves 5, 201.
 Selenium-76 3, 92.
 Self-diagnostics 2, 46.
 Self-documenting systems 5, 42.
 Self-propagating high-temperature synthesis 4, 88.
 Self-supporting gold foil 11, 204.
 Semiconductors 1, 89; 2, 56; 4, 29; 8, 65; 9, 84; 12, 10, 124.
 Semiconductor applications 8, 113; 8, 58.
 Semiconductor fabrication 2, 142; 5, 147; 7, 95; 8, 115; 9, 3, 81, 126.
 Semimetallic disc brake pads 7, 90.
 Semi-micro HPLC 4, 102.
 Sensitive technology 7, 45; 8, 54.
 Sensitivity variations 8, 151.
 Sensor system 2, 137; 6, 35.
 Separation and purification 8, 77.
 Separator materials 4, 70.
 Separator plates 12, 66.
 Serological reactions 9, 42.
 Severe service environments 2, 172.
 Shale oil 3, 77.
 Shared space 3, 120.

Shear mixing 7, 78.
 Shear modulus 4, 58.
 Shear stresses 10, 150.
 Sheet metal alloys 12, 72.
 Shell game 8, 11.
 Shelter 11, 60.
 Shielding 3, 127.
 Shock 2, 172; 5, 128.
 Shock fronts 9, 39.
 Shock isolation 11, 74.
 Shock protection 5, 128.
 Shock tests 8, 101.
 Shock transmissibility 5, 128.
 Shock tube laboratory 4, 49.
 Shock wave research 4, 80; 6, 40.
 Shoolery, Dr. James N. 10, 3, 143.
 Short-term precision 2, 103.
 Shuttle communications 7, 48.
 Shuttle competitors 7, 48.
 Shuttle Infrared Telescope Facility 5, 56.
 Shuttle pallet satellite 9, 64.
 Shuttle program 6, 50; 7, 48.
 SiC crystal growth technique 9, 148.
 Signal conditioning 8, 100; 10, 161.
 Signal diodes 8, 109.
 Silane gas 8, 81.
 Silica-based chromatography 3, 130.
 Silicides of metals 3, 144.
 Silicon 5, 72; 6, 39; 9, 149.
 Silicon carbide arresters 4, 123.
 Silicon carbide crystal 4, 62.
 Silicon carbide fibers 4, 64.
 Silicon chip 3, 143; 10, 82.
 Silicon nitride cutting tools 10, 112.
 Silicon semiconductor wafers 6, 114; 9, 81.
 Siloxanes 1, 48; 6, 97.
 Silver diethyldithiocarbamate procedure 3, 193.
 Silver recovery processes 2, 44; 10, 131.
 Silver Yearbook 12, 45.
 Silylenium ion 5, 40.
 Simulated earthquake effects 7, 56.
 Sine-square-pulse technique 1, 86.
 Single-mode, evanescent-wave coupler 10, 107.
 Single-column ion chromatography (SCIC) 2, 151.
 Single-crystal behavior 2, 143.
 Single-crystal fibers 4, 44.
 Single-junction cell 12, 63.
 Sintered-bronze friction plates 7, 90.
 Sinusoidal resonance 8, 103.
 Site problems 5, 101.
 6-millonth chemical 5, 44.
 Skilled workers 6, 45.
 Skylab missions 9, 69.
 Slip-rail, stepping motor 10, 104.
 Slope scaling 11, 100.
 Small-particle columns 3, 132.
 Small mass measurement instrument 9, 69.
 Smog particles 1, 47.
 Smoke 4, 35.
 Smokestack industries 7, 11.
 Smoking and nonsmoking 8, 19.
 Soak function 4, 124.
 Social change 4, 23; 7, 124; 9, 91.
 Social impact of technological change 3, 193.
 Social problems 9, 92.
 Social stress 2, 188.
 Software copyrights 10, 68.
 Software driver 8, 85.
 Software market 2, 43.
 Software package 5, 92; 7, 46; 9, 40.
 Soil bacteria 10, 96.
 Soil fertility 11, 17.
 Solar atmosphere 5, 92.
 Solar-beam lighting 2, 43.
 Solar cells 1, 37; 50; 12, 63.
 Solar cycle 6, 17.
 Solar-diesel power station 5, 51.
 Solar eclipse 6, 72.
 Solar energy 4, 35; 5, 12; 63.
 Solar radiation 6, 72.
 Solar system 1, 42; 5, 74; 7, 50; 9, 64.
 Solaris 11, 70.
 Solid moderated reactor 6, 72.
 Solids nuclear magnetic resonance (NMR) 3, 44.
 Solid-state joining 12, 75.
 Solid-state reactions 8, 111.
 Solvent extraction process 7, 88.
 Solving customer problems 5, 51.
 Sonic fatigue 4, 142.
 Sound reduction 8, 35.
 Sound waves 8, 35.
 Southwest Research Institute 10, 119.
 Soviet military threat 6, 45.
 Soviet scientists 9, 86.
 Soviet space schedule 6, 54.
 Soviet technology controls 6, 47; 7, 45.
 Soyuz T-8 spacecraft 6, 54; 9, 64, 69.
 Space 2, 51; 4, 42; 8, 155; 9, 70, 91.
 Space-borne atmospheric monitoring system 7, 37.
 Space-borne refrigerator 5, 80.
 Space commercialization 8, 71; 10, 46.
 Space endurance 2, 51.
 Space factories 6, 71.
 Space flight program 3, 64.
 Space-launching capabilities 7, 48.
 Space platform 3, 62.
 Space requirements 6, 121.
 Space research 4, 50; 9, 72; 11, 51.
 Space scientists 10, 45.

Index to Volume 25 (1983) of IR&D

continued

- Space shuttle 1, 43; 2, 43; 4, 49; 5, 85; 8, 50, 72; 9, 64; 10, 46; 11, 50, 66; 12, 60
- Space sickness 1, 43
- Space simulation chamber 8, 40
- Space stations 6, 72, 76; 9, 64; 11, 51
- Space structures 6, 76
- Space telescopes 3, 64; 10, 47
- Space wars 7, 124
- Spacecraft sterilization 9, 58
- Spacecab 6, 71; 9, 60; 11, 50
- Spelling 8, 39
- Spectra-Physics Inc. 10, 95
- Spectral absorption 4, 39
- Spectral content 2, 68
- Spectral emission 11, 92
- Spectral features 11, 92, 133
- Spectral interferences 2, 100; 9, 157; 11, 134
- Spectral profile 5, 140
- Spectrochemical analysis 11, 132
- Spectrographic analysis 11, 51, 112
- Spectrum Development Laboratories Inc. 10, 76
- Spent nuclear fuel rods 11, 73
- Spher - small particle heat exchanger receiver 4, 35
- Spin parity 5, 52
- Spin rate 4, 56
- Spinning rotor gas friction gage 10, 161
- Spirit of the frontier 4, 23
- Spillers 11, 60
- Sponsored research 7, 46
- Spontaneous malignancy 12, 11
- Spontaneous radiation 9, 84
- Sputtering anomalies 8, 109
- Sputtering rate 8, 109; 9, 154
- Stable-isotope labeling and detection 3, 44
- Stainless steel welded bellows 5, 149
- Standard of length 9, 60
- Standard of patentability 3, 31
- Standard of time 9, 60
- Standard platinum resistance thermometer 11, 99
- Standards-setting conferences 5, 53
- Star Wars solution 5, 11; 6, 11
- Starlab project 2, 76; 4, 42
- State government 9, 107
- State universities 1, 50
- Static deflections 5, 129
- Static electricity 2, 46
- Static interrupter 2, 73
- Statistical analysis 12, 91
- Statistical curve fitting 9, 115
- Statistically designed experiments 7, 94
- Statistics software 12, 90
- Steady state operation 5, 43
- Steam generator design 9, 39
- Stellar black hole 3, 82
- Stellar evolution 3, 71; 4, 51; 6, 60
- Stellar explosion 12, 58
- Stereomicroscopes 2, 109
- Stimulated emission of energetic particles 2, 66
- Stirling cycle cryogenic refrigerator 10, 136
- Stock market 2, 241
- Strontium barium niobate 9, 86
- Storage capacity of video disks 2, 70
- Strait thinking 7, 11
- Strained-layer superlattices 10, 63
- Strategic materials 10, 63
- Strategic planning and portfolio management 12, 23
- Strategic plans 3, 137
- "Strategy of Experimentation" 7, 94
- Structural damage 11, 74
- Straw Hat factory 5, 106
- Stray light correction 5, 140
- Street lighting 10, 46
- Stress reversals 2, 174
- Stress sources 2, 185
- Structural alloys 12, 74
- Structural chemistry 10, 144
- Structural components 9, 35
- Structural integrity 7, 88
- Stuffed basic weave yarn 9, 78
- Subatomic collisions 3, 85
- Subatomic particles 3, 92; 6, 11; 7, 62; 66; 11, 54
- Subduction 2, 64
- Submicron technology 2, 56
- Submillimeter astronomy 9, 72
- Subnuclear world 7, 66
- Subsea manifolds 9, 42
- Substrate effects 10, 148
- Substrate heating 8, 39
- Sulfur 8, 48
- Sulfur dioxide 8, 48
- Sulfur emissions 8, 48
- Sun 5, 92; 6, 17; 9, 74; 11, 60
- Sunlight 4, 35
- Sunspot activity 2, 66; 6, 17
- Super superconducting Collider 11, 32
- Supercomputer 1, 46
- Superconducting accelerator 9, 84
- Superconducting electronic device 3, 58
- Superconducting generator 8, 56
- Superconducting magnets 6, 56; 9, 49; 10, 144; 11, 52, 128
- Superconductivity 2, 56; 3, 44, 7, 33; 11, 92
- Superconductor materials 6, 71
- Supercritical-fluid chromatograph/mass spectrometer 1, 39; 10, 76
- Supercritical wing 11, 82
- Superficially 3, 92
- Superfluid helium 11, 58
- Superlativity 1, 90
- "Supermarket" concept 3, 121
- Supernova 3, 71; 4, 56, 98; 12, 58
- Superplastic forming 12, 72
- Super-proton synchrotron 3, 86
- Support centers for industrial technology 10, 54
- Support for industrial R&D 10, 58
- Support materials 12, 66
- Suppression chromatography 2, 132
- Suppressor column 2, 152; 9, 86
- Surface analysis 8, 3, 108; 9, 154
- Surface drag 11, 82
- Surface finishes 4, 66; 11, 112
- Surface Science Laboratories Inc. 10, 140
- Surface sensitivity 8, 111
- Surface structure 8, 108; 9, 154
- Surface vibrations 5, 74
- Surge arresters 4, 122
- Surgical tool detection device 10, 67
- Survival of civilization 10, 17; 12, 17
- Suspension overloading 7, 33
- Swedish R&D 7, 72; 8, 54
- Switch matrix system 10, 99
- Switching mechanisms 5, 106
- Synchronous acquisition 5, 120
- Synchrotron radiation 4, 99
- Synthetic separator compounds 4, 70
- T—
- Tailor-made devices 8, 65
- Tandem quadrupole-MS/FT-MS 11, 124
- Tape and disk storage systems 9, 56
- Taper charger 5, 64
- Target nucleus 9, 53
- Target reflectance 10, 155
- Target thickness 11, 142
- Tariff lighting 2, 187
- Tariff barriers 11, 92
- Tax credits 5, 136; 9, 39
- Tax incentive 5, 54; 10, 60
- Tax legislation 5, 134
- Taxes 9, 107, 203
- Teacher contracts 7, 47
- Teacher-training requirements 9, 194
- Teaching profession 7, 47
- Teaching reactor 10, 50
- Technical communications 2, 166; 8, 52
- Technical humanoid 3, 11
- Technical information 9, 11
- Technical innovation 10, 54
- Technical institutions 9, 93
- Technical personnel 12, 35
- Technique for SiC crystal growth 10, 132
- Technological goals 5, 11; 6, 11; 7, 124; 9, 62
- Technological innovation 4, 187; 5, 33; 9, 90; 10, 45; 11, 95
- Technology jobs 7, 37
- Technology programs 3, 62
- Technology Telescope 5, 58
- Technology transfer 6, 46; 47, 7, 46; 8, 39; 52, 54; 11, 50
- Tectonic activity 3, 17; 6, 17
- Telecommunications satellites 4, 70; 6, 71
- Telecommunications systems 9, 54
- Telephone voting 4, 187
- Telescope 4, 42; 7, 38; 9, 72; 11, 58
- Teletext system 9, 40
- Television transmission 3, 37
- Teletest Canada 1, 43
- Temperature compensation 2, 155
- Temperature distribution 4, 51
- Temperature sensors 11, 98
- Tensile ductility 12, 72
- Tensile loss modulus 3, 105
- Tensile storage modulus 3, 105
- Tensile strength 6, 114; 9, 76; 11, 114
- Tenth Centennial Index 7, 33
- Tenth planet 5, 76
- Terminal-to-host computer links 6, 88
- Terrestrial data 4, 17
- Terrestrial annihilation 12, 17
- Terrorist bombing 4, 187
- Test fuel pins 12, 46
- Testing regime 10, 149
- Tevatron I and II 3, 64; 6, 56; 9, 49; 11, 54
- Texas, Univ. of, at Austin 10, 104
- Text encryption 6, 85
- Thermal agitation of electrons 9, 54
- Thermal analysis curve 11, 114
- Thermal barrier coatings 11, 80
- Thermal conductivity 6, 114; 9, 149
- Thermal energy 1, 62; 5, 37; 12, 66
- Thermal management system 5, 66
- Thermal noise 11, 95
- Thermal power 11, 32
- Thermal pulse video thermography 6, 58
- Thermal shock 6, 113
- "Thermite" reactions 4, 88
- Thermocouples 11, 98
- Thermomolding 12, 74
- Thermographic inspection 6, 58
- Thermonuclear reactions 8, 60
- Thermoplastics 4, 65; 6, 96
- Thickness variations 12, 75
- Thin-film amorphous silicon 12, 63
- Thin-film heated glass 10, 92
- Thin-film microbatteries 4, 68
- Thin-film strain transducer 10, 119
- Thin gold foils 6, 155
- Third World nations 9, 205
- Charles A. Thomas/Carroll A. Hochwalt award 3, 44
- Thorium high-temperature reactor 12, 46
- Three-dimensional graphics 4, 130; 5, 43; 6, 66; 8, 108
- Three-dimensional semiconductor devices 8, 58
- Three Mile Island 1, 37; 3, 53; 9, 39
- Three-shaft turbine 7, 78
- Thyristor 11, 41
- Thyristor-controlled dc power supplies 11, 66
- Time dilation 8, 162
- Time-frequency multiplexing 3, 37
- Time-reversed image 9, 86
- Time series 9, 114
- Time standards 9, 60
- Titan Probe/Radar Mapper 4, 122
- Titanium alloys 12, 55
- Titanium carbide 12, 66
- Tokamak Fusion Test Reactor (TFTR) 2, 60; 3, 52; 5, 43; 10, 35; 11, 66
- Top quark 7, 66
- Total eclipse targets 10, 155
- Torch system 1, 3
- Torch test stations 11, 66
- Tornado formation 3, 76
- Torque transmission 5, 149
- Torsion 5, 43
- Toshiba Corp. 10, 135
- Total vulnerability 8, 161
- Tox Box 4, 62
- Toxic chemicals laboratory 4, 82
- Toxic gases 4, 36
- Trace analysis 2, 102
- Trace-element distribution 9, 156
- Track-and-hold device 2, 162
- Tracking and Data Relay Satellite (TDRS) 3, 64; 6, 50; 7, 48; 9, 64
- Trade Adjustment Assistance Centers 8, 46
- Trade control agreements 6, 45; 8, 45
- Trade fairs 7, 29
- Trade policies 6, 47
- Trade sanctions 7, 45
- Trade secrets 7, 27
- Trademarks 5, 29; 7, 27; 9, 31; 11, 31
- Transducer feedback 11, 141
- Transfer processes 4, 128
- Transfer standards 10, 167
- Transient reactor test facility 12, 46
- Transient/waveform recorder 10, 100
- Transistor 3, 44
- Transistor-transistor logic 2, 161
- Transmission electron microscopes 11, 41
- Transmission line faults 4, 128
- Transnational peace-keeping force 4, 182
- Transparent nylon 6, 98
- Transplutonium actinides 4, 60
- Transport processes 6, 62
- Transportation 5, 62; 6, 23; 7, 23; 8, 46
- Transported hazardous waste 9, 203
- Transposons 8, 77
- Transport waste assay system 10, 116
- Trapped-ion analyzer cell 11, 126
- Traveling wave tubes (TWT) 6, 114
- Trench isolation 9, 58
- Trenching techniques 11, 74
- Triaxial woven fabric (TWF) 9, 78
- Tribble system 1, 75
- Tricordinate, positive silicon 6, 39
- Trifluoromethane sulfonic acid 12, 66
- Trimethylarsine 3, 193
- Trion 1, 42
- Tunable, ultrapure single-frequency light 9, 82
- Tungsten barrier 7, 33
- Tungsten carbide 12, 55
- Tungsten hexafluoride 9, 81
- Tungsten inert gas (TIG) welding 6, 35
- Tunnel current 5, 72
- Tunneling effect 3, 58; 7, 124; 9, 56
- Turbine-engine components 7, 76; 94
- Turbofan engines 11, 82
- Turbomolecular pump 4, 142; 11, 128
- 20,000th patent awarded 9, 84
- 2020 vision 12, 56
- Twain-luselage aircraft 2, 247
- Two-dimensional NMR 11, 94
- Two-point calibration 2, 103
- Tylan Corp. 10, 136
- Typewriter coding 5, 97
- U—
- UA-1 and UA-2 experiments 3, 86
- Ultra-high-strength fibers 9, 76
- Ultrathin gold foil 3, 43
- Ultra-short laser pulses 10, 61
- Ultrasonic cleaning system 8, 45
- Ultrasonic imaging system 10, 76
- Ultraviolet (UV) detector 2, 153; 6, 104; 9, 96
- UV/vis spectrometers 4, 103; 5, 140
- Underwater pipeline plow 11, 74
- Undisclosed financial interest 9, 107
- Unemployed steelworkers 4, 42
- Unemployment rates 9, 80
- Uniform regulations 11, 49
- UK Infrared Telescope (UKIRT) 9, 72
- U.S. balance of trade 7, 11
- U.S. economy 7, 37; 9, 11
- U.S. funding practices 9, 62
- U.S. intelligence community 2, 68
- U.S. laboratories 9, 47
- U.S. patents 5, 136, 201, 203
- U.S. technology 2, 88; 5, 203; 6, 29; 9, 11; 10, 60
- Universal mass 7, 62
- University-industry cooperation 7, 46
- University research 9, 62; 10, 54
- University support 5, 136
- Unmanned space station 12, 60
- Unpressurized pallet 6, 71
- Unrestricted funding 9, 106
- Unshifted once-through synthesis 12, 64
- Unskilled labor 9, 92
- Unstable nuclei 9, 53
- Upper atmosphere 6, 72
- Upper atmosphere of the Sun 5, 92
- Upper Atmospheric Satellite Program 5, 58
- Uranium 11, 41
- Uranium isotopes 10, 52
- Uranus 5, 76; 9, 206
- User-computer communication 5, 97
- User fees 9, 203
- Utility patents 9, 31
- V—
- VAR generator 2, 73
- VLSI chip design 11, 108
- VLSI technology 3, 141; 5, 89; 7, 104; 8, 115; 9, 54
- Vacuum diffusion furnace 5, 149
- Vacuum gages 4, 145; 10, 161
- Vacuum monochromator 7, 54
- Vacuum pumping systems 5, 149
- Vacuum relief valves 4, 139
- Vacuum target chamber 12, 50
- Vacuum technology 9, 3
- Vacuum tunneling 5, 72
- Vacuum ultraviolet spectrometer 10, 84
- Validity of a patent 7, 126
- Vanadium-gallium compound 9, 35
- Van De Graaf accelerator 12, 50
- Vapor ejector 4, 142
- Vapor-phase crystal growth 9, 149
- Vapor-phase soldering 6, 96
- Vaporization 11, 134
- Variable-path cell 5, 141
- Variable-wavelength detector 4, 112
- Varian Assoc. Inc. 10, 128
- Vector boson 3, 86
- Vector DNA molecule 8, 77
- Vector images 9, 116
- Vega 11, 58
- Velocity of light 4, 96
- Venture capital 2, 31; 9, 11
- Venus radar-mapper project 3, 64; 7, 50
- Verification of proper shipment 2, 88
- Very Large Array (VLA) facility 4, 54
- Very-large-scale integration 3, 141; 5, 89
- Very-Long Baseline Array of Radio Telescopes 5, 56
- Vibration 2, 172; 5, 128, 149; 9, 42
- Vibration table 6, 98
- Vibrational energy 4, 80
- Video camera 11, 37
- Video data acquisition 5, 115
- Video disk 2, 70; 7, 66
- Viewability problems 11, 106
- Viscous heat dissipation 3, 133
- Visible spectrum 9, 60, 84; 11, 107
- Vision 11, 25
- Visiting professorships for women 4, 78
- Visual acuity 11, 107
- Visual fatigue 2, 187
- Visual imagery 11, 105
- Vitamin C 9, 42
- Vocational education 9, 93
- Voice in the wilderness 10, 17
- Void volume 4, 112
- Volcanic ash clouds 1, 62
- Volcanic events 8, 62
- Volumetric flow rate 3, 132
- Von Neumann bottleneck 1, 46
- Vorte Industries Inc. 10, 107
- Voting 4, 187
- Vulpecula (Little Fox) 4, 54
- W—
- W and Z⁰ particles 9, 49
- W particles 3, 86; 7, 64
- Wafer cassette transport system 7, 3, 95
- Wafer etching 5, 149
- Wafer handling 11, 141
- Wall effect 3, 133
- War and nuclear weapons testing 9, 142
- Warping 8, 97
- Washington Award 3, 44
- Waste disposal 4, 82; 11, 50
- Waste heat 5, 51; 12, 66
- Waste heat recovery system 5, 51
- Waste oil 6, 35
- Waste recycling in space 6, 72

Wasted scientific effort	9, 62	X-ray fluorescence (XRF)	11, 132	X-ray stress measurement	1, 86	Z ⁰ particle	7, 64
Water distribution system	3, 74	X-ray imaging camera	5, 62	X-ray tomography	5, 43	Zero drift	11, 99
Waterhole III	4, 42	X-ray monochromator	10, 107	Yamal gas pipeline	8, 47	Zero gravity	6, 74
Wave soldering	6, 96	X-ray observatory	12, 58	Yankee ingenuity	3, 110; 5, 138	Zero-shift effects	10, 161
Wavelength-dispersive x-ray fluorescence	11, 134	X-ray photoelectron spectroscopy	10, 140	Yeast cells	4, 36	Zinc-bromine batteries	1, 37
Wavelength distribution	11, 106	X-ray photons	11, 132	Yellow light frequency	9, 60	Zinc oxide ceramics	4, 123
Wavelengths of light	4, 35	X-ray powder diffraction	1, 84	Yield point	7, 78	Zirconia	7, 76
Way stations	7, 56	X-ray scattering techniques	6, 40	Young stars	3, 71; 9, 74	Zirconium-barrier fuel	10, 104
Weak nuclear force	7, 64	X-ray signals	12, 39	Ytterbium	4, 60	Zirconium silicate	7, 60
Weapons technology	5, 201						
Weather control	12, 17						
Weather patterns	6, 17; 9, 64						
Weather radar system	10, 135						
Weatherability	1, 50						
Weight in a vacuum	9, 69						
Weightlessness	6, 155						
Weldable strain gages	1, 62						
Welded-metal bellows	5, 147						
Welding robot	6, 35						
Welfare programs	9, 92						
Western technology	6, 45; 7, 45						
Westinghouse Electric Co.	10, 104; 136						
Wet friction material	11, 66						
Wheelchair	7, 90						
"Whisker" reinforcement fibers	6, 35						
Wideband satellite experiment	4, 44						
Wind energy	4, 76						
Wind tunnel	12, 40						
Windmills	11, 68						
Wine	12, 40						
Wireless entertainment system	7, 19						
Withdrawal of scientific papers	2, 39						
Women in R&D	6, 29						
Wood burning heating unit	5, 122						
Word processing	12, 3						
Work force	6, 82						
Work plan	9, 91						
Workday	3, 138						
Workshop on Refractory Metal Silicides	5, 23						
World economy	12, 40						
World hunger	9, 25						
World peace	10, 17						
World politics	5, 11; 7, 124						
World's resources	4, 182						
Worldwide economies	11, 17						
Woven carbon fiber fabrics	11, 92						
	9, 76						
-X, Y, Z-							
XRF spectroscopy	11, 132						
XUV (Short-wavelength UV radiation)	7, 52						
X-ray diffraction stress analyzer	10, 140						
X-ray emissions	3, 92; 12, 58						

1983 Authors Index

Agree, Ted 1, 41; 2, 87; 3, 62; 4, 49;
5, 56; 6, 45; 7, 45; 8, 46; 9, 47; 10, 54;
11, 49; 12, 45

Anderson, D.C. 1, 80

Andrews, J. Edward 1, 89

Anundson, Robert 9, 114

Apelian, D. 11, 112

Arnold, Steven M. 9, 110

Baumann, Paul 9, 107

Blanch, Harvey W. 8, 76

Borden, P.G. 7, 99

Bowers, W.D. 11, 124

Brantley, V.B. 12, 78

Brill, M. 2, 185

Burge, D.E. 2, 151

Carnobell, Peter 3, 114

Carey, Robert M. 5, 147

Carr, Judy 2, 80

Class, Walter 8, 115

Cocks, David 8, 108

Czaja, S. 2, 185

Davis, Andrew W. 2, 178

Deleganes, S. 5, 118

Derri, Skip 1, 46; 2, 56; 3, 52; 9, 42;
5, 52; 6, 56; 7, 66; 8, 68; 9, 81; 10, 63;
11, 79

Dewey, C. Forbes Jr. 5, 112

DiCesare, Joseph L. 3, 130; 4, 110

Dimock, Jack 11, 141

Douglas, John H. 10, 143

Drew, Donna M. 2, 100

Fanali, Joseph R. 8, 82

Feller, Jack 7, 94

Finkle, Robert L. 6, 113

Fisher, Jeff E. 2, 130

Fisher, Walter E. 8, 98

Frant, Erwin A. 1, 25; 2, 25; 3, 25; 110; 4;
23; 5, 23; 134; 6, 23; 7, 23; 8, 23; 9, 25;
10, 25; 11, 25; 12, 23

Gambill, James B. 8, 98

Gargini, P.A. 3, 141

Geren, Gerald S. 1, 33; 2, 31; 3, 31; 4, 29;
5, 29; 6, 29; 7, 27; 8, 29; 9, 31; 10, 31;
11, 31; 12, 29

Gilbert, Chet 2, 172; 5, 128

Gill, Philip S. 3, 104

Goode, Roger A. 3, 136

Grant, William B. 10, 154

Graziano, Richard J. 2, 136

Gruber, Richard I. 4, 122

Gwynne, Peter 1, 43; 2, 51; 3, 88; 5, 56;
7, 2; 8, 50; 7, 60; 8, 50; 9, 49; 10, 45; 11, 58

Hamilton, C.H. 12, 72

Hastings, M.D. 1, 80

Hayakawa, Shigeru 2, 142

Haydon, Edwin 2, 51; 8, 58; 8, 45; 12, 46

Heimiller, Robert 6, 82

Hengesh, B. 6, 108

Hibi, Kyokatsu 4, 102

Hill, James W. 2, 166

Hill, Michael L. 8, 115

Hodge, F. Galen 7, 82

Holt, J. Broch 4, 88

Hornstein, J. Virgil 8, 82

Hunter, R.L. 11, 124

Jackson, Mark A. 2, 130

Jones, Robert R. 1, 11; 2, 11; 3, 11; 9, 4;
11; 5, 11; 12, 6; 11; 7, 11; 8, 11; 9, 11;
10, 11; 11, 11; 12, 11

Jueneman, Frederic B. 1, 19; 2, 17; 3, 17;
4, 17; 5, 17; 6, 17; 7, 19; 8, 19; 9, 17; 10;
17; 11, 17; 12, 17

Laderberg, Joshua 9, 106

Jupille, T.H. 2, 151

Kramer, Gideon 11, 132

Lancione, Robert L. 2, 100

Laverty, David P. 3, 110; 5, 134

Lawrence, Virginia 12, 90

Lehrer, Robert 4, 116

LeKuch, Herb 2, 172; 5, 128

McFarlin, D. 2, 185

McIver, R.T. Jr. 11, 124

Margulis, S.T. 2, 185

Miller, D.R. 12, 78

Miller, J.R. 1, 80

Miller, Stephen 11, 96

Molinar, Fred 2, 178

Morant, Charles 7, 96

Mosbacher, C.J. 1, 69; 2, 115; 123; 8, 91;
11, 119

Mowery, R.A. Jr. 5, 102

Mukerjee, Tommo 4, 128

Murch, Gerald M. 11, 105

Mutsuddy, Beebhas C. 7, 76

Nieberding, W.C. 9, 148

Obrenski, Robert J. 5, 140

O'Brien, Bob 11, 96

Parr, Gary L. 6, 88

Pensak, David A. 1, 74

Price, G. 7, 99

Rook, Larry 4, 122

Ruud, Clayton O. 1, 84

Ruys, Theodorus 3, 120

Saito, Munao 4, 102

Sanford, R. 5, 118

Saunders, G. Thomas 8, 104

Scholes, William A. 3, 71; 4, 49; 6, 80;
11, 68

Schwartz, Jules J. 3, 136

Scott, Steven W. 7, 88

Sholz, F. 7, 99

Shoolery, James N. 11, 90

Sparrow, Gene R. 8, 108

Sperry, D. 6, 104

Squire, David 9, 114

Stambler, Irwin 2, 64; 3, 53; 5, 66; 6, 72;
9, 54; 10, 46

Starks, D.R. 1, 80

Stevens, Timothy S. 9, 96

Strathman, Michael 9, 154

Sullivan, John J. 10, 161

Takahashi, Mikio 4, 102

Thomas, H.L. 2, 160; 5, 103; 6, 96; 7, 68;
2, 151

Togami, D.W. 4, 76

Tuffy, Harold 4, 139

VanderLinden, Dale 4, 95

Van Deusen, William 4, 102

Wada, Akio 11, 112

Walker, Nicholas G. 9, 154

Ward, Ian D. 2, 108

White, William Jr. 4, 76; 6, 62; 7, 8; 8, 50;
9, 74; 10, 58

Young, Dennis A. 3, 127

Zais, Arnold 3, 127

Zimmer, David J. 10, 148

Introducing MegaPlus

2MW

the most POWERFUL nitrogen laser available

With over 175 systems in the field,
PRA knows pulsed lasers. And we
listen to you...

"More power for multiphoton
excitation, photolysis and
fluorescence" ... PRA responds with
two full Megawatts of power. It's there
when you need it.

For more information please contact:

Photochemical Research Associates
100 Tulsa Rd.
Oak Ridge, TN 37830
Tel (615) 483-4433

Photochemical Research Associates Inc.
15 Meg Drive, London, Ontario
Canada N6E 2V2
Tel (519) 686-2950
Telex: 064-7597

PRA

